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THE MEDICAL PIONEERS IN THE EAST INDIES

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The last years of the 15th century and the early years of the 16th opened up the period of the great navigators and explorers of Portugal. Her possessions were far flung. The king assumed, among other powers that of "Lord of the Conquest, Navigation and Commerce of India, Ethiopia, Arabia and Persia."

Vasco de Gama had sailed around the Cape of Good Hope and found the new way to India and had returned during 1497-1499. In 1510 the fleet had conquered Goa, the first Asiatic possession of the Portuguese. The new world presented vast opportunities in commerce to their merchants and of study to their scientists. It is to a group of pioneers whose interests lay in oriental medicinal plants and their uses that this essay is devoted. Sprengel gives us a concise statement: "Two Portuguese physicians, Garcia del Huerto (ab Orto) and Christoph da Costa have to be awarded the credit for having acquainted Europeans with the natural treasures of these rich countries." But the group is greater than the two famous names mentioned by Sprengel. Others too are worthy of remembrance though what we know of them is scattered and hidden and has not found its way into our histories of medicine or our biographic

[1] Versuch einer pragmatischen Geschichte der Arzneykunde, 3rd ed. 1827, Vol. III, p. 42.

dictionaries. The larger group is remarkable in many respects; we shall find among them far traveled men of adventurous spirit and of valor, martyrs, true and faithful disciples of Hippocrates.

Thomas Pires

In the very early years, after Vasco de Gama's first voyages to India, and a year after the Portuguese had taken Goa, we learn that an adventurous Portuguese, Thomas Pires, born in Leiria, the king's pharmacist was sent to India to collect information concerning the drugs of the Eastern world. He left Portugal in 1511.

His duties carried him to Cananore (Kananur), Cochin and Malacca. In 1515 he was sent as ambassador to the King of China and he left with the fleet in 1516 to sail to Canton. But before he left Malacca he wrote an extensive letter to King Manuel on the medical drugs with which he had become acquainted. It is this letter which especially interests us.

Ficalho [2] described it as a simple enumeration of the drugs he had met with without any mention of their medicinal properties and in general with very unsatisfactory description.

Lemos [3] furnishes us with this list of the plants, together with their botanical names. Lemos adds that we cannot consider that this letter had any influence on the course of Portuguese medicine because it lay buried in the Archives for many years.[4]

There is no further mention of any subsequent work of Pires bearing upon this subject and so we might end this chapter but Pires' experiences in China became very tragic, not because of any act of his, but because of difficulties which arose between the Chinese and Portuguese governments.

As a result, he and his companions were thrown into prison for a long period, were put through severe tortures, so that a number of them died, the survivors when liberated from prison were exiled to different parts of China, separated from each other.

[2] Conde de Ficalho, edition of Coloquios dos simples, e drogas—compostos pello Doutor Garcia d'Orta, Vol. I, 1891, Vol. II, 1895.

[3] Lemos, Historia da Medicina em Portugal, Lisbon, 1899, pp. 217-274. Lemos also makes note of Thomas Pires in his Amato Lusitano, 1907, p. 56.

[4] It was published by P. J. da Silva in the Gazeta de Pharmacia, see below.

A further history is not certain for there are two versions. One, that he died early, the other that after his exile, he married a native woman, that he made her and their children Christians, and died sometime before 1543. For in that year a traveller in China met with a young woman who claimed to be his daughter and from her he learnt of Pires' death.

Ficalho (*Coloquios*) makes frequent mention of Pires' list in his notes.

Lemos tells this story in some detail. Michaud [5] gives a long account of Pires' adventurous life and of his sufferings but without mention of his letter and his study of plants.

An "*Elogio Historico e Noticia Completa de Thomé Pires,*" in which there is a reproduction of the letter to King Manuel, besides other letters of Pires, was published in Lisbon in 1866.[6] The writer has been fortunate in obtaining a photostat of this tract (from the Army Medical Library). It makes extravagant claims as to the importance of Pires' letter.[7]

But we must recognize from Pires' work that he was the first of the pioneers through whom information on this important subject was brought to Europe.

There is an additional bibliographical reference which must be noted. Thomas Pires wrote "on the preparation of 'laca' (gum-lac), an oriental substance obtained from the Red Sea and China." [8]

It is to be regretted that no information concerning his early life and heritage could be found in any of the libraries accessible to the writer.[9]

There is another Pires mentioned by Garcia named Sancho Pirez, a Portuguese, native of Matosinhos, whom Garcia treated. "In secret he told me he was a Christian and ate with me things forbidden

[5] Michaud, Biographie Universelle, Paris (edited by Michaux), Vol. 33, p. 396.
[6] This tract was published in the Gazeta de Pharmacia por P. J. da Silva, p. 41.
[7] Lemos, Historia, Vol. I, p. 273.
[8] Summario da Bibliotheca Lusitana, Lisbon 1787, Vol. III, p. 356, Vol. IV, (Part II) p. 92.
[9] Nouvelle Biographie Générale (edited by Hoefer, 1855-1866) gives a brief account without mention of the letter. The Enciclopedia Universal Ilustrada makes note of the letter, 1921, Vol. 44.

to Moors and spoke ill of them. He pretended to be a Moor and he had been an artilleryman and passed into the Mohammedan service." [10]

No one familiar with the history of the Jews in the Iberian Peninsula but will be reminded by his name of the strange story of his contemporary, Diogo Pires, a Portuguese Marrano, who reverted under the name of Solomon Molcho and followed that strange fanatic or imposter, the pseudo-Messiah, David Reubeni, who came to Europe from the Orient. Diogo Pires' story soon ended when, at the age of thirty-one, he died at the stake in an auto-de-fé in Mantua in 1532.

We find rare mention of the name of Pires. The Enciclopedia Universal Ilustrada of Barcelona refers, in addition to our Thomas, to the following: Jaime Pires (1680-1750), a Flemish Jesuit professor at Ipres, Louvain and Brussels; a Vasco Pires de Camones, a 14th century Spanish nobleman; and several Brazilians in the 18th and 19th centuries, with names combined with Pires.

More rewarding results were obtained from records of the Inquisition in Portugal. The autos-de-fé in which the Jews of the district of Braganza were concerned were collected; there were 1797 individual entries.[11] Between 1589 and 1735 there were no less than 41 individuals tried for Judaizing, all with the name of Pires. In most cases it is stated that they were of Castilian origin.

The writer feels that while this does not prove that Thomas Pires was a *Christao-Novo*, the evidence is very suggestive.

Dr. Hieronymus Diaz Lusitanus

In the works of Amatus, a mine of reference to contemporary scholars, we find mention of one Hieronymus Lusitanus medicus. There was a discussion concerning heliotrope. It occurred during Amatus' sojourn in Antwerp. " At this time Dr. Hieronymus Lusitanus was present with us, the same who is now in India, commissioned by the King of Portugal, where he is now practicing medicine

[10] Sir Clements Markham, Colloquies on the Simples and Drugs of India by Garcia da Orta, London, 1913.

[11] Memorias Arqueológico-Historicas do Distrito de Bragança por Francisco Manuel Alves; "Os Judeus no distrito de Bragança," 1925. The writer will elsewhere make reference to Diogo Pires, a Marrano friend of Amatus Lusitanus.

with great glory . . . and together we became disciples of the Parisian professor, Christiernus Morsianus [12] who spent several months in Antwerp." [13]

The same Hieronymus appears in the following consultations of the Centuria I, under Curatio 91 and 98; and in Centuria II, Curatio 55.[14] In these cases the consultations are in the form of dialogues. It is in the first of these cases that Hieronymus says: " For in India, where I am long practicing the medical art, I begin the treatment of those suffering from bilious fevers in this manner; through it I have been rewarded with great glory and no ordinary emolument. . . ."

Lemos [15] thinks that this Hieronymus is the same Jeronymo Dias whose story is told by Gaspar Correa [16] under the chapter heading: " How a Bachelor of Medicine was proved to be a Jew and was burnt, etc." It was in 1543 in Goa that Jeronimo, one of the group of *Christaos-Novos*, in conversation with friends gave utterance to opinions which aroused suspicion of not being in harmony with Catholic doctrine. They were reported to the bishop, who sent emissaries to speak with him and to take careful notes of the substance of his views. A formal trial followed which satisfied the clerical authorities that his views were Jewish. He was then placed into the hands of the secular government to be burnt at the stake. Having recanted and made confession he was shown the favor of euthanasia by being smothered before being burnt.[17]

The statement concerning Jeronimo's being in Antwerp proves that the meeting was during the period between 1533 and 1540

[12] Gesner's Bibliotheca 1574, p. 120. Hirsch Biographisches Lexikon, 2nd. ed., Vol. 4, p. 269.

[13] Amatus, In Dioscoridis Anazarbei de Materia Medica, 1533, Lib. IV, Enarr. 191, 192.

[14] First published in 1551 and 1552.

[15] Lemos, Amato Lusitano, 1907, p. 75. Also in his Amato Lusitano 1904, p. 16.

[16] Lendas da India (1858-1866) IV, pp. 292-4. Augusto da Silva Carvalho, Garcia d' Orta, Coimbra 1934, p. 38. He is mentioned in Roth's History of the Marranos, Philadelphia 1932, p. 394; Dos Remedios, Os Judeus em Portugal, Coimbra, 1928, Vol., II, pp. 232-233; J. Lucio D'Azevedo, Historia dos Christaos Novos Portugueses, Lisbon, 1921, p. 99.

[17] Carvalho, Garcia d'Orta, p. 38. It is noteworthy that the first auto-de-fé took place in Portugal in 1540 and that the Inquisition " was not extended to India " until 1560! (Encyc. Britan., 11th ed., article Portugal.)

during which time Amatus was residing there. We do not know when Jeronimo went to India,—but the date of his trial and auto-de-fé was in 1543.

Amatus published his works in which Jeronimo's name appears many years later (1551-1553). What is still more confusing is that the first case cited in Centuria I, states the exact day of death of the patient, 12 August, 1549. This was six years after Jeronimo's death. It would appear that either there were two doctors Jeronimo, who were both pioneers in India, or more probably that the use of Jeronimo's views was adopted in the form of the dialogue in the Centurias, Amatus being ignorant of his friend's misfortune.

The name of Diaz is not rare among *Marranos* met with in this study. One Brites Diaz, a surgeon in Goa, was burnt at the stake in Goa in 1597.[18] Diogo Diaz was an apothecary in the same city in 1572.[19] One Francisco Dias [20] was "a celebrated surgeon" in Burgos, whose successor was Christobal Acosta [21] (1576).

It is perhaps but an odd coincidence that the discoverer of the Cape of Good Hope was Bartholomeu Diaz.

Dr. Franciscus Barbosius

We discover that still another pioneer is mentioned several times in Amatus' writings: Franciscus Barbosius. This name first appears in 1553, in the Dioscorides. Discussing a plant brought from India he tells us that some roots were given him by Barbosius who was then practicing in Ancona.[22] In a later chapter [23] Barbosius is spoken of as "an Avicennist, of great learning and experience, who practiced medicine in India for 18 years, not without great profit and honor."

[18] Carvalho, loc. cit., p. 79. [19] Carvalho, loc. cit., p. 109.

[20] Garrison, An Epitome of the History of Spanish Medicine, Bulletin of the New York Academy of Medicine, 1931, VII, p. 604.

[21] Carvalho, loc. cit., p. 68. D. Joaquín Olmedilla y Puig, Estudio histórico de la Vida y Escritos del Sabio Médico, Botánico y Escritor del Siglo XVI, Christobal Acosta, Madrid, 1899. (P. 92.)

[22] Liber I, Enarr. 15. Barbosius was living in Ancona as early as 1549 for his name is found in that year among the Portuguese representatives to whom the town-council of Ancona granted the power to establish a bank in that city. (H. Rosenberg, Alcuni Documenti Riguardanti i Marrani Portoghesi, Ancona 1935, p. 4, note 1.)

[23] Liber V, Enarr. 120.

But the most interesting reference to Barbosius is found in Amatus' Centuria III. The case history is one of dysentery and intermittent pulse and the patient in Ancona is Barbosius himself. He was then 50 years of age. There is a long medical discussion in the form of a dialogue and the participants are Amatus, Laguna and Barbosius. The discussion is of much interest but too long to be inserted here.[24]

Concerning the date we may note that this Centuria appeared in 1556; (but the letter of dedication is dated 1554). Amatus' stay in Ancona was from 1547 to 1555, with brief intervals of absence. Laguna spent the years of 1545 to 1555 in Italy. He read from his Epitome of Galen; this book appeared in Basle in 1551. The consultation, therefore, took place between 1551 & 1554.

It was through singular good fortune that my friend Professor Alexander Marx [25] discovered the following interesting account.

It is based upon a " Hebrew Chronicle by Benjamin Nehemiah ben El-Nathan probably Rabbi of Civitta Nova and was written about 1560." [26]

This account has reference to the Inquisitional trials in Ancona and the frightful Auto-de-fé of 1556. It is mentioned in the writer's account of Amatus.[27]

" Only one of them remained in Ancona: his name was Dottore Barboso who found favor in the eyes of the Ancona community and the administrator Cesaro della Nova, for he was an expert physician and a respected man, a scholar of very high intelligence, and in him alone did they have confidence. Therefore they permitted him to stay in Ancona to attend to his practice and to observe the Christian religion. But he had to wear for a certain time a green coat over his suit, a sign of [penitence]. Now Dr. Barboso stayed for a few days in Ancona; then one day he went in secret out of the gate of the city and then he, too, went to Turkey and returned to the observance of

[24] Curatio 44. It has been published in this *Bulletin*, 1941, vol. IX, pp. 199-209.

[25] Professor of History and Librarian of the Jewish Theological Seminary of New York, to whom I am deeply indebted for these notes as well as for his invaluable help in many other studies. H. F.

[26] The text is found in the Revue Étud. Juiv., 89, p. 380, and *Tarbitz*, vol. II, 1931, p. 350.

[27] Bulletin of the Institute of the History of Medicine, 1937, p. 612.

the Torah of Moses with all his heart and soul. His Jewish wife also had escaped from prison before the trial was finished and she fled together with his servant, a splendid and reliable youth, who was one of the Jewish inhabitants of Civitta Nova. He cleverly freed her from prison and brought her to the city of Salonica in Turkey. Thus husband and wife escaped with the help of God and dwelt in security!"

We may now return to Amatus for the final note on Barbosius. It is found in Centuria V, published in 1560[28] and the patient is none other than the 14 year old son of Dr. Barbosius "whom the Turks killed so brutally and outrageously in Thessalonia!" The boy suffered from "chærades" (scrofula) and died of phthisis.

It may not be without interest to take note of a somewhat earlier author, another Barbosa, whose work is renowned and not unrelated: The Book of Duarte Barbosa,[29] an Account of the Countries bordering on the Indian Ocean and their Inhabitants, written by Duarte Barbosa and completed about 1518. It was translated from the Portuguese Text, and edited by Mansel Longworth Dames. (Hakluyt Society, 1921).

Doctor Garcia da Orta

We may now take up the foremost of our pioneer group, Garcia da Orta, in very brief outline. He was born in the last years of the 15th century probably in Elvas, Portugal, close to the Spanish border, and studied in Salamanca and at Alcala between 1515 and 1525. He practiced medicine for a while and then became professor of logic at Lisbon. In 1534 he sailed for India, a voyage of six months. "The first years of his life in India were spent at Bacaim and Diu. The influence of his kinsman, Martin Affonso du Sousa, later Viceroy of India, was of unquestioned assistance." Later he lived in Goa. He gained great distinction and spent much time in travelling and study of the country and its flora. He "had a garden with many medicinal herbs at Goa."[30] Until recently it was held that, like his birth, so the date of his death is uncertain.

[28] Curatio 20.

[29] Duarte Barbosa was a Portuguese official in India from 1500 to 1517. His "Navigationi and Viaggi" appeared in 1563.

[30] Markham, loc. cit., Introduction, p. ix.

¶ Coloquios dos ſimples, e drogas he couſas mediçinais da India, e aſsi dalgũas frutas achadas nella onde ſe tratam algũas couſas tocantes amediçina, pratica, e outras couſas boas, pera ſaber cõpoſtos pello Doutor garçia dorta: fiſico del Rey noſſo ſenhor, viſtos pello muyto Reuerendo ſenhor, ho liçençiado Alexos diaz: falcam deſenbargador da caſa da ſupricaçã inquiſidor neſtas partes.

¶ Com priuilegio do Conde viſo Rey.

Im preſſo em Goa, por Ioannes de endem as x. dias de Abril de 1563. annos.

Title Page

Garcia Da Orta, Coloquios Dos Simples, E. Drogas Da India.

His work has been given renewed and most satisfactory consideration in the past half century. His "*Coloquios dos Simples & Drogas*" of India, which appeared in 1563 in the form of dialogues, was not only the first but the most important contribution on this subject to European medicine. The great historian of Botany, Meyer, acknowledges that we owe the most abundant and the most important information concerning East Indian plants to Garcia da Orta.[21]

It finds grateful and appreciative recognition in the splendid catalogue of "Early Books in the Library of . . . the King of Portugal."[22]

We cannot do better than cite a few extracts from this work: "Garcia da Orta's biography has been written. The Conde de Ficalho has traced it in masterly style.[23] Few learned men have had Garcia da Orta's good fortune in finding in our country a biographer who possessed such rare erudition, the most impressionable sensitiveness to Portuguese things, as well as the most aristocratic elegance of speech" (page 651).

"The great physician and botanist lived in the East for more than thirty years, and there he carried out the studies and researches which enabled him, in his old age, to publish his monumental work. '*The Coloquios dos simples e drogas mediçinais* is one of the books which bring the greatest honour to medicine in Portugal, and the many translations and commentaries of his work, which were exhausted with amazing speed, are a sufficient proof of his influence on European medicine.' (Cited from Dr. Maximiano Lemos, Historia da Medicina em Portugal, Vol. I, 279.)" (Page 653.)

"Garcia da Orta adhered to a rigorous scientific method and set up observation as an infallible criterion in natural sciences. In this respect he was ahead of his time, because when the most advanced considered themselves greatly daring in preferring the unaltered text of Hippocrates to the commentators of Galen, Garcia da Orta emancipated himself from respect for authority, taking as his motto: 'I have seen.' Furthermore, the centre in which he lived gave him a

[21] Geschichte der Botanik, IV, 1857, p. 407.

[22] Published by Maggs Bros., London in 1929.

[23] Ficalho: Garcia da Orta e o seu Tempo, Lisbon, 1886. (Copy at the Library of Congress and H. F.) Since this paper was presented for publication the writer has secured "Garcia d'Orta, Notas sobre a sua passagem pelo Estudo e Escolas Gerais de Lisboa 1527-1534" by Teixeira de Carvalho, Coimbra 1915.

certain freedom of thought and expression. In Spain—he says so himself—he would never have dared to affirm anything contrary to the Greek theories and particularly to those of Galen; but in the heart of India, free from the fetters of convention, in the midst of a free and luxuriant vegetation, it mattered little what Dioscorides had said, or Pliny, Avicenna or Galen, the ancients or the moderns. Do not frighten me with them, I have seen. (Dr. Maximiano Lemos.)" (Page 654.)

"Having travelled a great deal in India, (he went on numerous campaigns along the west coast of India) he was able, through his powers of observation and his natural judgment, to gain valuable information connected with the two branches of science in which he was interested, and to correct and improve what he had read. And in his *Coloquios*, with no pretensions towards literary style—for he wrote badly—he gave an artless account of what he had seen. As Ficalho says so aptly, Garcia da Orta had a certain sceptical curiosity, which made him wish to see things with his own eyes; he had besides a great scientific probity which allowed him to say only what he had seen. Nothing more, and nothing less. But even this was already a great deal. It was enough to place him among the pioneers of modern science, among those who did not confine their reading to weighty folios, but were beginning to spell out words in that great book which is open to the light of day." (Page 654.)

In 1929 a very interesting account was published by Lt. Commander Louis H. Roddis of the U. S. Navy, "Garcia da Orta, the First European Writer of Tropical Medicine and a Pioneer in Pharmacognosy." [34] It was in this essay that Roddis suggested that on March 10, 1934, there should be a suitable commemoration of Garcia's sailing from Portugal to India.

This suggestion indeed, led Augusto da Silva Carvalho to make a most extensive study of the early records; it is entitled "*Garcia d'Orta, Comemoracao do quarto centenario da sua partido para a India em 12 de Marco 1534*," [35] and was published in 1934. This is all the more remarkable when we remember that the masterly work of Count Ficalho closes the eleventh chapter with the words that

[34] Annals of Medical History, 1929, New Series, vol. I, pp. 198-207.
[35] See page 7 of this work.

"Garcia da Orta left not even the slightest note or document in India. . . . We are, therefore, forced to close as we began, declaring that we do not know when he died as we declared that we do not know when he was born." [86]

Here are collected the records of da Orta's life in India and of the Inquisition involving the da Orta family, and the punishment meted out to its members. So far as they concerned Garcia, the inquiry was just a bit too late, for Garcia had died and so it was only possible to inflict punishment by disintering his remains and burning them.

The Jewish origin of Garcia had never previously been known or even suggested in any of the publications during more than three centuries. Carvalho's discovery has found mention since in a brief note of Dr. Augusto d'Esaguy.[87]

Much interesting information is to be found in Carvalho's work. Here we shall mention but a few facts. Carvalho is convinced that the da Orta family was of Spanish origin and had fled to Portugal. He attributes the difficulty he encountered in obtaining a chair at the university and his reason a very short time later for sailing to India, and many other facts and circumstances of his life to his being Jewish. Indeed he suspects that the manner in which the death of so noted a man was concealed is thus explained. The evidence, however, is furnished by the several trials of the Inquisition of members of the da Orta family, some even before Garcia's death. Carvalho finds that Garcia suffered a severe illness beginning in the early part of 1568 [88] and that he died in the fall of that year and that he was then not quite 70 years of age (p. 64).

Carvalho seeks the answer to the question, How is the leaden silence to be explained concerning the memory of Garcia, a silence that has caused the disappearance of the vestiges of his glorious life in India, which even arouses the suspicion that his books were destroyed? [89]

Carvalho discovered that da Orta's life was one of great affliction and tribulation, that he suffered serious domestic difficulties and

[86] Ficalho, Garcia da Orta, p. 280.

[87] Bulletin of the Institute of the History of Medicine, 1937, vol. V, p. 483.

[88] Markham writes that "Garcia is believed to have died in 1570." (Introduction xiii.)

[89] Carvalho, p. 64.

finally that on October 25th, the very year of his death 1568, his sister Catherine was brought before the Archbishop in the Cathedral to hear her sentence to be burnt at the stake.[40]

Finally we find the verdict of the Inquisition on December 4, 1580. Doctor Garcia da Orta, *Christao-Novo*,—deceased, who dwelt in this city (living as) a Jew, is to be surrendered to the secular justice. "Relaxado";[41] (i. e. to be burnt).

Da Orta's work is entitled:

> Coloquios dos simples, e drogas he cousas mediçinais da India, e assi dalgũas frutas achades nella onde se tratam algũas cousas tocantes amediçina, pratica, e outras cousas boas, pera saber cõpostos pello Doutor garçia dorta: fisico del Rey nosso senhor, vistos pello muyto Reuerendo senhor, ho liçençiado Alexos diaz: falcam desenbar gador da casa da supricaçã inquisidor nestas partes. Com priuilegio do Conde viso Rey. Impresso em Goa, por loannes de endem as [sic.] x. dias de Abril de 1563. annos.

This book was the third printed in Goa and was filled with typographical errors. A second edition appeared in Goa in the same year.[42]

It was not until 1872 that a new edition appeared in Lisbon published by de Varnhagen.[43]

The standard edition of the Coloquios was published by the Count de Ficalho in two volumes.[44] This is a model for faithful and thorough editing. Count Ficalho, as mentioned above, wrote the Life and Times of Garcia da Orta, now very scarce.[45]

Dr. Orta's *Coloquios* are written in the form of dialogues. "The two interlocutors are the two characters united in Garcia da Orta, the two sides of his spirit . . . (one) the former student of Salamanca, erudite, ready with quotations, with Dioscorides and Pliny at

[40] Carvalho, p. 164.

[41] Carvalho, p. 78.

[42] Markham, Introduction, p. xi.

[43] It contains many *lacunae* and imperfections, is without notes and only attempted the identification of one plant, in which it is quite wrong." (Markham, Introduction, p. xi.)

[44] Volume I. appeared in 1891, Volume II. in 1895.

[45] Markham, Introduction, p. xii.

his finger ends . . . (the other) the traveller and observer, who, in the face of all quotations, says tranquilly, ' I have seen it.' " [46]

The work is divided into 57 chapters and gives " the first descriptions of (57) plants and drugs." [47]

We are now fortunate in having an English translation. It appeared in 1913 and is a translation of Ficalho's edition by Markham, to which we have referred above.

Garcia's work suffered the penalty of the times meted out to books written in the vernacular; it was written in Portuguese. The original editions became rare and inaccessible. It is true that a " translation " into Latin by Clusius appeared in Antwerp in 1567: " *Garcia Ab Orta, Proregis Indiae medicus*: etc. . . . *Nunc vero primum latina facta à Carolo Clusio*," but as Markham states it was " a sort of *résumé* or epitome . . . very different from the original." [48]

The Latin *Aromatum et Simplicium . . . Historia* was published in numerous editions in Antwerp and Leyden in 1574, 1579, 1593, 1601, 1605 and 1611, evidence of their popularity. And this is likewise shown in translations in other languages. In 1572 a Spanish translation, *Discursos de las cosas aromaticas, arboles y frutales, y de otras muchas medicinas simples que se traen de la India Oriental, y sirven al uso de la medicina*, by Juan Fragoso was published in Madrid.

An Italian translation by Monardes from the Latin of Clusius was published in Venice in 1575 and other editions appeared in 1582, 1589, 1597, 1616. *Orta (Garzia da) Dell'Historia de i Semplici Aromati, et altre cose che vengono portate dall' Indie Orientali pertinenti all'uso della Medicina, con Annotationi di C. Clusio. Parte Prima, diuisa in quattro Libri. Et due altri libri parimente di quelle cose che si portano dall' India Occidentali. Di Nic. Monardes.*

Antonio Collin published a French edition in Lyon in 1602: *Histoire des Drogues, Espiceries, et de certains medicaments simples, qui naissent es Indes tant Orientales que Occidentales, etc.*

Finally we may mention a Latin translation by Spach published in Strasburg in 1601 made from the Spanish translation by Fragoso.

[46] Markham, Introduction, pp. xii & xiii.
[47] Markham, Introduction, p. xiii.
[48] Markham, Introduction, p. xi.

It will be noted that all the translations are based upon Clusius' work. In like manner the criticisms of Bontius[49] are based on Clusius' Epitome and not directly on the work of Da Orta itself. The same holds good for Astruc whose citations are from Clusius.[50]

We may mention here that the Spanish work of Christobal Acosta followed rapidly after the *Coloquies of da Orta.* Markham states that it " is copied wholesale from it." We shall discuss this matter below.

The long list of editions and the number of translations of Clusius' work has been recorded in order to show that the translation took the place of the *Coloquios.* How completely this occurred is proved by a glance at the biographical dictionaries. Bayle & Thillaye (in 1855) do not give da Orta a line, and mention his name only in the long account of Clusius and his *Aromatum.* "(In travelling through Spain . . . he met with the book of Garcia da Orta which the author had composed in Latin but which he had published in Portuguese as his friends had wished!")

In Jourdan's seven volume *Biographie Médicale* (1820-1825), the name of da Orta is to be found only in the item Écluse (Clusius).

Mercklin's *Lindenius Renovatus* (1686) devotes a paragraph to Garcias ab Horto, *Lusitanus* but it contains nothing but a note on Clusius' translation, mentioning the editions of 1574 and 1593.

Gesner's *Bibliotheca* (1574) gives a short but more satisfactory statement that da Orta wrote his work in Portuguese in dialogue form and that Clusius translated it into Latin, contracting it into an epitome.

It is only Eloy (1756) who gives a satisfactory note on " *Garcia d' Horta ou Garcie Du Jardin,*" with some biographical mention but he makes the error of stating that da Orta's work was written in Spanish.

Da Orta's *Coloquios* was long lost from view; it was seen only in the reflection of Clusius' translation. It is well that this long solar eclipse has ended.

Garcia states " If God spares me to return to Spain . . . I will also tell that famous doctor Thomas Rodriguez, how the exhortation

[49] Bontius, De Medicina Indorum (Notæ in Garciam ab Orta) Leyden, 1718.
[50] Astruc, Venereal Disease, English edition, Vol. I, p. 88

which Mateolo[51] made to the physicians of the King of Portugal is all answered, and that you present it to him from your heart, complying with the request that he had made to you," (which " led to Orta's writing this book ") ![52]

Ficalho is certainly correct in identifying *Thomas Rodriguez* as *a Veiga*, the distinguished professor at Coimbra and physician to the royal family. It is to him that Dimas Bosque wrote a letter of dedication, published in the original work.[53]

Markham confuses him with Joao Rodrigues, better known as Amatus, for he ascribes to him the " *Commentaries on Dioscorides* (Venice, 1553 & 1557)" the work of the latter.

The name d'Orta is not one unfamiliar in Spanish and Portuguese Jewish history. Mayr Duerta, was a physician in Tudela in 1395 and died in 1404.[54] The name Samuel Dorta is met with in Lisbon in 1492 and again in 1555.[55] (The former established a printing press, and printed the Almanach of Zacuto.)

A long list of those bearing the name of da Orta is to be found in Carvalho's work.[56]

We cannot more fittingly close this estimate of Garcia da Orta than in the words of his most diligent and thorough student, Count Ficalho; " When we search the fine traditions of the Portuguese spirit in literature as in science, we must mount up to those men of the 16th century, strong and original, who with sword or pen in hand, created and inscribed an epoch. Among these men we recognize Garcia da Orta as the most illustrious representative of the natural sciences." [57]

[51] Pietro Andrea Mattiolo author of vernacular Commentary on Dioscorides, Venice, 1544.

[52] Markham, pp. 135 & 492. Ficalho, Coloquios vol. I, pp. 233-234.

[53] Ficalho, Coloquios, vol. I and Garcia d' Orta, p. 20. The writer has been unable to learn more about Bosque. The only article devoted to him is found in a reference to the Journal de Pharm. e de med. da India Portugueza, No. 7, 1862, but this is not accessible.

[54] Baer, Juden im Christlichen Spanien, 1929, vol. I, pp. 984, 986.

[55] Kayserling, Navarre, p. 79 and Portugal, p. 99.

[56] Pp. 180-183.

[57] Ficalho, Garcia da Orta, p. 392.

Christobal Acosta

Christobal d'Acosta was a Marrano,[68] the son of a Jew who fled from the peninsula to Tangiers or Zeuta or, according to another more reliable version, to Mozambique; here his son was born about 1515. Christobal spent some time in Portugal and accompanied the viceroy Luiz de Ataide as his physician when the latter embarked in 1568 for India. He did not remain long in Goa for in 1569 he was in Cochim as physician at the Royal Hospital. In 1671 he was in Malabar and later in Maluco. It is supposed that he was in the flotilla commanded by Martin Alfonso Sousa at Malabar, whom Acosta treated for an injury. He was also in Cochim, in Aleppo, Damascus, Egypt, Jerusalem and Persia and returned, in 1573, by way of Italy to his home in Burgos where he died in 1580.

Acosta tells us himself about his interest in botany and his urge to study the plants of different countries.

Acosta writes that "I tried to discover in different regions and provinces, the varieties of the plants which God has created for the health of man and I met in the East Indies, Dr. Garcia da Orta, a Portuguese physician, an earnest man, of rare, great talent, whose praise I leave for a better occasion, because it would be so manifold, that even if I had intended to express much, I should nevertheless have failed to say most; he wrote a book entitled *Coloquios* . . . about some of the plants which grow in those countries. As his work deals with different plants, medicines and other matters pertinent to human health and also with such as are without use or benefit for this purpose, it was necessary for him in order to follow the dialogue . . . to digress from the matter belonging to the principal purpose." He remarks that there are many typographical mistakes that are disturbing. Further, "the treatise lacks another thing that is essential, namely illustrations of the plants with which he deals." The result was Acosta's "*Tractado de las drogas y medicinas de las Indias orientales, con sus debuscadas al vivo.*" (Burgos 1578.)

Markham gives this interesting commentary! Acosta describes

[68] Carvalho, Garcia da Orta, p. 66. D. Joaquín Olmedilla y Puig, Estudio histórico de la Vida y escritos del Sabio Médico, Botánico y Escritor del Siglo XVI Cristobal Acosta, Madrid 1899, p. 92.

"sixty-nine plants and other sources of drugs and medicines. The great merit is that there are full-page illustrations to forty-six plants with the roots, very well drawn. . . . It is not all copied from Orta, but the greater part certainly is. Acosta occasionally makes independent remarks, and there are a few plants not in Orta." [59]

Markham furnishes a list of the plants according to da Orta with the modern scientific names and the names given in Acosta and noting too the illustrations of Acosta;—he uses these drawings in his edition of the Colloquies.

"The Spanish work of Christoval Acosta followed almost immediately on that of Orta, and is copied wholesale from it. In a preface by the licentiate Juan Costa, Professor of Rhetoric at Salamanca, this is denied in the following words: 'Acosta did not compose the work at his ease, but in durance of sad captivity which he suffered in Africa, Asia, and China. Although his work owes much to the diligence of Garcia da Orta, yet I have compared the two works, and I can say that Orta only sketched the first lines, and that Acosta gave the living colours, and made perfect what Orta had commenced.'"

Markham's comment is: "This may be rhetoric. It is not truth!" [60]

Sprengel maintained many years ago that Acosta's work, which was in Spanish, was almost a verbal translation of da Orta.[61]

As early as 1672 Nicolas Antonio (Bibliotheca Hispana) writes that Acosto "borrowed a large part from Garcia da Orta which he did not conceal."

Meyer [62] tells us that Acosta added little that was new or of value to da Orta's work but he says that "the drawings of Acosta are poorly drawn, though they do show the effort to portray nature."

Acosta speaks in great eulogy of da Orta, states that he knew and practiced with him but he does not tell precisely when. However, Carvalho doubts this because in the period mentioned da Orta suffered from a grave and prolonged illness.[63]

[59] Markham, Introduction, pp. xiv, xv.
[60] Markham, Introduction, p. xiv.
[61] Hirsch, loc. cit.
[62] Meyer, Geschichte d. Botanik, vol. IV, p. 409, 1857.
[63] Carvalho's Garcia d'Orta, Coimbra, 1935, p. 67.

The name of Acosta is one that is famous in Jewish history, notably that of Uriel Acosta. It is generally assumed that Jose Acosta (1539?-1600), author of *Historia Natural y Moral de las Indias,* was a brother of our Christobal.[64] Carvalho declares this as untrue and that Jose's brother was a Jesuit Christoval.[65]

A list of Acosta's works is appended in footnote.[66]

The interest of the Portuguese in the medical affairs of India did not abate throughout the 16th century. We learn that yet another distinguished Portuguese physician, Rodrigues de Castro, then of Lisbon, received a royal invitation to go to India to continue the investigations of Garcia da Orta and Christopher Acosta, but he declined.[67]

A single note of De Castro informs us that he had recently received (end of the 17th century?) an Indian plant (Cassia fistule) from *Eduardo Mender,*[68] *Orientalis Indie, Protomedico,* an official whose rank indicates his importance.

[64] Markham, Introduction, p. xiv.

[65] Carvalho, Garcia d'Orta, p. 66 note.

[66] List of Works of Christobal a Costa:

Tractado de las Drogas, y medicinas de las Indias Orientales, con sus Plantas debuxades al biuo por Christóual Acosta médico y cirujano que las vió ocularmente. En el qual se verifica mucho de lo que escribió el Doctor Garcia de Orta Burgos 1578. (This was translated by Clusius into Latin and published in 1582, 1593 and 1605; an Italian edition appeared in 1585; a French one in 1619.)

Tractado en loor de las mujeres de la Caridad, onestidad, constancia, Silencio y Justicia; con otros muchas particularidades y varias historias. Dirigido á la Serenissima Sennora Infanta Donna Catalina de Austria, por Christóval Acosta Affricano. Venice 1592.

Tractado en contra y pro de la vida solitaria, Con otros dos tratados, uno de la Religión y Reliogioso. Otro contra los hombres que mal viven, Llenos de mucha doctrina y exemplo. Dirigidos al Rey D. Phillipe Nuestro Señor. Por Christóval Acosta Affricano. Venice 1592.

Del Amor divino, del natural y humano de lo que debemos á los animales; libellus seu tractatus tres.

Discurso del viaje de las Indias Orientales y lo que se navega por Aquellas partes.

(This list has been made complete with the help of Olmedilla's work (p. 27). It is interesting to note the works on religion. Olmedilla nowhere makes reference to Acosta's Jewish origin.)

[67] Lemos, Historia da Medicina em Portugal, Lisbon 1899, vol. I, p. 259 and Zacutus Lusitanus, Porto 1909, pp. 230-231.

[68] The name is printed *Mender* in all editions of *De Universa Muliebrium Morborum Medicina,* Lib. II, Cap. XV. Lemos gives the name as *Mendes* (Historia, vol. I, p. 266).

JANEWAY ON HYPERTENSION

Theodore Caldwell Janeway (1872-1917)

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Some men seem to come before their time, do their work before others are capable of understanding the problem, and are taken away too soon and too young. Finally, when the season arrives and the field is ripe for the advance of the work of such an individual, he is no longer among the living. Except for a few, his close students and friends, the importance of his work may have been relegated to the forgotten past. Credit may even be given to others, also hard workers, who reaped the harvest of the seed this man had so carefully sown on a field that was uninviting and non-fertile when he first commenced to plant his ideas. No doubt he sweated profusely in attempts to cultivate and propagate what he had so tenderly laid before his element. Those are the cold facts that every innovator must face squarely, and of all these no one realizes better than himself that time is the most important of all such factors. Time to carry on his work, time to spread his ideas, and time enough to have the work and ideas accepted by his fellow men—these are the invincibles that such a man has to consider calmly every day of his short life.

Theodore Caldwell Janeway, the son of Edward Gamaliel Janeway (1841-1911) and Francis Strong Rogers, was born in New York city on November 2, 1872. His father was considered America's leading clinician, consultant, and teacher of medicine at the turn of the century.

Formal education for young Theodore began at the Cutler School. Then, in 1892, he graduated from the Sheffield Scientific School, Yale. There was no question on the choice of a profession, for he chose to follow in the footsteps of his father. Developing in a home with a highly charged medical atmosphere, young Janeway graduated in 1895 from the College of Physicians and Surgeons of New York city.

Conscientious, persevering, and serious, Janeway matured early. He was always studious and a hard worker. Among his fellows he was well-liked and cheerful. He was a light-hearted, keen individual. In the study of medicine, under the constant supervision and guidance of his father, he received an intensive training. As far as was ever possible for one man to transfer his abilities, the extraordinary skill of the elder Janeway was engrafted into the heart and mind of his son.

After graduation from medical school at the age of 23, young Janeway commenced practice with his father in New York city. At the same time he became an instructor in bacteriology, a position which he held at Columbia University for one year. During 1897 he served an internship at the St. Luke's Hospital, and then returned to become associated with his father. This arrangement continued for 12 years, until the death of the elder Janeway in 1911 at the age of 70.

In 1898, when he had definitely settled in private practice, young Janeway married Eleanor C. Alderson of Overbrook, Pennsylvania. To this happy union eventually came five children, two sons and three daughters.

For the next eight years, from 1898 to 1906, he instructed and lectured on medicine at the University and Bellevue Hospital Medical College. In the next year, 1907, he became an associate in clinical medicine at the College of Physicians and Surgeons of Columbia University.

During those years, and thereafter, he taught medicine from the standpoint of disease as a departure from the physiological basis, the first to do so in New York city. With Oertel, he introduced the clinical-pathological conference in the City Hospital. The clinical study of blood pressure in this country began with him and he devised the first instrument readily available at the bedside.

Upon the retirement of Dr. Walter Belknap James in 1909, Janeway, at the age of 37, became professor of medicine at Columbia's College of Physicians and Surgeons. He also became visiting physician to St. Luke's, the Presbyterian, and the City Hospital of New York. As an organizer and clinician he excelled, and became the leader of a younger group of physiological clinicians who quietly but

surely transformed American medicine. He became one of the editors (1908-1917) and a contributor to the Archives of Internal Medicine, and was associated, later in a governing capacity, with the Rockefeller Institute of Medical Research.

In 1914, under a grant from the Rockefeller Foundation, the Johns Hopkins University adopted a full-time basis for three chairs in the medical school. The decision to place these chairs on a whole-time basis was a "new departure in the medical education of the English-speaking world."

Janeway was called to Baltimore as the first full-time professor of medicine at the Johns Hopkins University Medical School and Hospital under the William Welch Endowment. His professorial predecessors were William Osler and Lewellys F. Barker. Therefore, Janeway resigned his professorship in medicine at Columbia in 1914. Later Osler said of Janeway that with ample private means, rare constructive ability, and a keen capacity for research, there were combined in him all the elements of a successful full time teacher.

When Janeway came to Hopkins at the age of 41 he had already a national reputation as a clinician. His book on the clinical study of blood pressure appeared in 1904. From that date until he came to Hopkins eight important articles on hypertension were published under his name in five outstanding medical journals.

In appearance he was a slight, well-knit, alert figure with quick yet graceful movements. With a mobile expression, his face would light and his eyes sparkle with animation as he talked. His whole appearance, to the stoop of his shoulders, indicated the scholar combined with the man of wide public interest. As a public speaker, he began slowly and with hesitation, but soon warmed up and presented his subject in a clear, logical, convincing manner. As he caught the sympathy of his audience, he became eloquent and developed a high degree of oratory by simple force of earnestness and moral conviction. By an unusually charming manner he made many friends in his personal relations.

Immediately after war was declared by this country in April of 1917, Janeway offered his services to the Army. His application was accepted and he was assigned to active duty in the Surgeon-General's office in Washington, after being persuaded that he could

do the best work in this country. The general direction of the Division of Internal Medicine was his important capacity. Through his efforts, and with the cooperation of Major Warfield T. Longcope, the splendid personnel of internists who had charge of the cantonments and camps was obtained. In addition to the almost day and night work at the Surgeon-General's Office, Janeway conducted two clinics a week in Baltimore.

In the late autumn of 1917 he made a personal investigation of the outbreaks of measles and pneumonia at certain of the cantonments. This, in addition to the energy required for the work in Washington and the clinics in Baltimore, weakened his power of resistance. Toward the end of December he became ill, and, after less than one week's illness of pneumonia, died at his home in Baltimore on December 27, 1917, at the age of 45. Surviving him were his mother, his wife, three daughters, and two sons.

Clinical Study of Blood Pressure

Janeway's first work, this treatise,[1] was published when he was 32 years old. It was not the first book in English on the subject, nor was it the best one available on blood pressure during that period. The work, as he termed it in the subtitle, was " A Guide To The Use of the Sphygmomanometer, in Medical, Surgical, and Obstetrical Practice, with a Summary of the Experimental and Clinical Facts Relating To The Blood-Pressure in Health and Disease."

Far more important, so it seems to this investigator, was the fact that the work intensified his interest in the subject of hypertension and led him to approach the various aspects of the problem during the next twelve years. Thus Janeway became the first real student of essential hypertension in all its phases and in its relation to the heart and kidneys from a clinical and experimental standpoint.

In the preface of this volume Janeway said:

> The modern physician's armamentarium is so complex that additions to it are far from an unmixed boon. Nevertheless the sphygmomanometer has been welcomed in many quarters as an instrument of real value.

The text he divided into three parts, physiological, technical, and clinical. Under the first part, the physiological, he considered the

direct measurement of the blood pressure in a very limited manner, and the blood pressure in the normal animal which included a discussion on the factors that determine the pressure such as the energy of the heart, peripheral resistance, elasticity of the arterial wall, and the volume of the circulating blood. He also noted periodic variations in the aortic blood pressure.

Under the second or technical part were: 1, the indirect measurement of the blood pressure which considered all the previous methods of palpitation, sphygmographic methods, others which applied pressure through a solid block, and the sources of error in all of these; and 2, under the modern sphygmomanometer, all the instruments measuring the systolic end-pressure only, or the diastolic only. Therein Janeway described an apparatus which he had devised and he plainly stated that the only original feature was the folding U-tube manometer.

The third and last part of the treatise, on the clinical aspects, was the most important. Under the discussion of the blood pressure in normal man he mentioned the influence of age, sex, and occupation. He noted periodic, diurnal, posture, sleep, meals, alcohol, tobacco, psychical states, muscular exertion, external temperature, baths, atmospheric pressure, and the effects of menstruation on the blood pressure. He stated clearly:

> I regard with suspicion any pressure above 135 mm.; 150 in a young person, or 170 in an older one, ***when found on several examinations and with due precautions.*** (Italics mine.)

As to the blood pressure in disease, Janeway was one of the earliest, if not the first, workers in the field to mention, emphasize, and re-iterate the effects of essential or permanent hypertension on the heart. He said:

> A permanently high level of blood pressure is found in connection with a lasting increase in the peripheral resistance which the left ventricle must overcome, combined with hypertrophy of the latter, by which it is enabled to meet the demand.

Under the causes of hypertension he seemed to be debating the problem in his own mind, for first he said:

It seems evident, therefore, that an abnormally high blood pressure cannot exist permanently, unless there has been some damage to the regulating power of the visceral circulation.

A little further on he modified this statement in regard to the mechanism, and again mentioned the effects on the heart. Janeway may have been in doubt as to the causes of hypertension, just as we are today, but he was apparently well acquainted with the part eventually played by the heart in essential hypertension. As though in answer to the above statement, he added:

But the increase in peripheral resistance of itself would be insufficient to account for a lasting increase in aortic pressure. The depressor mechanism is twofold, and the normal heart shields itself from overstrain by another reflex through this nerve, which automatically slows it by way of the vagus. This probably only comes into play in the more considerable and sudden variations in pressure. It evidences, however, a limit to the reserve power of the heart. With increase in peripheral resistance, increased cardiac energy is required to keep the same volume of blood flowing through the capillaries, and, if it is lasting, the working ability of the heart must be raised to a higher average level. This necessitates either more or larger muscle fibres. Hence, permanent high blood pressure cannot be maintained without hypertrophy of the left ventricle.

Under the effects and dangers of hypertension on the heart, from the clinical standpoint, he stated very clearly:

The most common complaints one meets with in this condition are: dyspnea or exertion, or the more severe spontaneous attacks, which we call cardiac asthma; precordial distress, varying in degree from slight substernal oppression or a feeling of tightness, to the most intense angina pectoris; and subjective or objective disturbances of the heart's rate or rhythm. Attacks of edema of the lungs are rarer and depend on the development of weakness of the left ventricle, throwing more work on the right than it can perform. If the right ventricle gradually becomes secondarily insufficient, then general venous congestion and edema set in.

Further along in his book Janeway made another very clear statement, under diseases of the heart muscle, and this one indicated a thorough understanding between the physiology and pathology of the heart, a relationship that could be kept well to the fore in many pathological studies today. For he stated:

The clinical diagnosis of muscular heart lesions seems more influenced by prevailing fashions than that of almost any other group of pathological conditions. Not long ago it was the custom to diagnosticate 'fatty heart' in all patients showing cardiac enlargement with symptoms of insufficiency, not due to valve defects or kidney disease. Now these same people are usually said to have 'chronic myocarditis.' I have seldom seen either diagnosis strikingly confirmed at autopsy, though the latter designation comes nearer the truth. My personal feeling inclines strongly to the belief that an anatomical diagnosis in these cases will always be beyond the reach of clinical investigation and worth little when it is attained.

His "Clinical Study of Blood Pressure" concluded with chapters on the readings, value, and importance of the pressure in nervous and mental, surgical and obstetrical conditions. Coming from the mind of a comparatively young physician at the turn into our so-called era of modern medicine, such statements as to essential hypertension and its effects on the heart are not only definitely concise and clear but are the first to be found on the subject. One might add, and could readily conclude, without stretching the point, that his deductions along these lines were genuinely brilliant.

Subsequent Contributions on Clinical and Experimental Hypertension

Two years after the publication of his book Janeway read a paper on persistent arterial hypertension before the New York Academy of Medicine.[2] Apparently at this time he had already begun a study of the numerous patients who came to his father's office. As we shall learn later, he kept accurate records of their progress over a period of years. No doubt he realized what he was up against at the time in presenting such material, for he said:

Patients exhibiting persistent high blood pressure as the salient feature of their disordered physiology seem more common in private practice than in hospitals, where we see the terminal but seldom the earlier manifestations. When they come to autopsy, as a rule, many secondary effects of the hypertension are present to confuse the picture. For these reasons I feel that such facts as I desire to bring forward have a certain validity apart from the postmortem confirmation.

From this he ventured into the field of experimental hypertension and published the work in 1909. With the assistance of Alexis

Carrel, he attempted to study more in detail the increase in blood pressure following the reduction in kidney substance.[3] As it was not possible to take innumerable blood pressure readings directly from an artery, he devised a modified Riva-Rocci method,[4] by means of which he was enabled to take approximate readings from the foreleg of the dog. The blood pressure was studied in 23 dogs. On ten an operation for the excision of one kidney was made, with infarction of a considerable portion of the remaining kidney by ligature of the branches of the renal artery at the hilum. The work was not original with him, but to confirm the reports of others who used this method of renal ischemia. His results were not definite, yet it may be noted that in later publications he began to speak of the renal factor in hypertension. It cannot be assumed here whether Janeway concluded that a kidney factor existed as a basis for essential hypertension, but it may have made him even more doubtful about the underlying factors of the entire subject.

After 1909, when he became professor of medicine at Columbia's College of Physicians and Surgeons, Janeway found little time to carry on the experimental work in hypertension. He made one more attempt with Edward A. Park in 1911 and 1912. This time it was on the question of epinephrine in the circulation and its relation to blood pressure.[5] Some possibility of a constricting substance being present in the circulating blood of hypertensives arose and he investigated the theory. Conclusions reached were as follows:

> The examination of uncoagulated blood from six persons with high blood pressure has failed to show the presence of epinephrin or other constricting substances. At the present time there is no evidence that epinephrin, in amounts sufficient to produce its physiological effects upon any hitherto used test objects, exists in the circulating blood, with the exception of blood from the suprarenal vein.

However, Janeway continued to report and discuss the important clinical aspects of essential hypertension. Following along the lines of investigation he started earlier among private patients,[2] he reported a study of the causes of death in 100 patients with high blood pressure.[6] Here again he emphasized that the early occurrence of dyspnea, whether on effort or of the paroxysmal type, in a patient with high blood pressure indicates marked danger of cardiac insufficiency.

In the following year he presented an extensive paper on clinical and experimental studies in nephritic hypertension.[7] This was a summary of all his experimental work with Carrel,[3, 4] Park,[5] and the clinical work with his father.[2] Bright's classic contribution was fully considered, with all the theories, mechanical and chemical, including renin and epinephrin, to that date. This paper could be taken to indicate that he had accepted the kidney role as an important factor in the production of hypertension, but his next and most important contribution offset the idea entirely. The only explanation regarding the discrepancies, if they may be called such, that this investigator has to offer is that Janeway considered the experimental hypertension produced in the dog to be one thing and that found clinically in man to be another, neither being related or connected in theory or in fact with the other. All data bears this contention out because experimentally renal ischemia produces permanent hypertension but no one has been able to cause hypertensive heart disease in the dog.

Undoubtedly Janeway's finest paper on hypertension, one that may be pointed to without question as the classical treatise on the subject, appeared in December, 1913.[8]

For over nine years he had studied 870 cases of essential hypertension. All were private patients from the well-to-do classes of society. Detailed analyses were made in regard to the sex distribution, the proportion of living and dead, the age distribution, the various symptoms associated with hypertension, and the causes of death with the relation of the early symptoms. He noted that the three decades from 40 to 69 years contained 80 to 90% of the cases. Janeway emphasized that the height of the systolic blood pressure is a minor factor in determining the life expectancy. Included were data on 51 patients with hypertension living more than ten years from the onset of the first sympton. Important conclusions of this extensive study were:

(1) The most important symptoms associated with high blood pressure are circulatory rather than renal.

(2) The early occurrence of symptoms of myocardial weakness, especially dyspnea, indicates a more than 50% probability of an eventual death by cardiac insufficiency.

(3) The average duration of life in this group of patients after the onset of symptoms has been four years for the men and five for the women.

(4) Half of the whole number of deceased died during the first five years; one-quarter of the number lived between five and ten years, and the remaining quarter over ten years after the appearance of the first symptom. The existence of this considerable number of patients living for a long period of time suggests the need of great caution in making a prognosis as to life expectancy.

After Janeway came to Johns Hopkins in 1914, he wrote one more paper [9] on hypertension. This was his last contribution to medical literature. He summarized all the pertinent literature and presented all of his own ideas on the question of human blood pressure. The clearness and astuteness of his thoughts on the subject may be gained from this one sentence:

Increased blood pressure has been found to be the earliest and the most important functional disturbance in a very common type of circulatory disease.

Janeway's Other Contributions, Especially on Digitalis

In 1908 he discussed digitalis,[10] when the use of this important drug was being generally abused. He emphasized that for minor grades of cardiac insufficiency the continued use of small doses for weeks or months is often of advantage.

An important contribution was a report [11] presented before the Section on Therapeutics (Pharmacology), Physio-Therapy, and Balneology of the 17th International Congress of Medicine in London during August of 1913. At least five years before anyone made mention of this subject, Janeway noted it under his comment on the drugs used in cardiac insufficiency with normal rhythm:

In certain cases with normal rhythm, I have seen digitalis followed by as speedy relief of symptoms as in fibrillating cases. This has been particularly true in patients with cardiac insufficiency secondary to prolonged high blood pressure.

A second important point he brought out in this discussion was on the toxic arrythmias induced by digitalis, for he said:

In all these hearts with regular rhythm I believe that dosage should be more cautious than in fibrillating heart. The onset of abnormal rhythm is one guide to toxic effects.

The World War came along, and, like all such inhuman man-

made conflicts, relegated progress to a vanishing point. Medicine was no exception. For four years time and man moved backwards, and when the forces of war were temporarily in subsidence men started forward again, not where they had left off in 1914, but back at least 20 years. Most of the outstanding contributions of the early part of the present century were completely forgotten. So it was with Janeway's work on hypertension. A few remembered and tried to carry on where he had stood. Among these were Mosenthal of New York and Longcope of New York and Baltimore. Their subsequent contributions need no comment here as they stand out readily by themselves.

Janeway was preparing an elaborate work on the diseases of the heart and blood vessels to have been published early in 1918. Military duties interfered and it was nearly completed at the time of his death. The manuscript was not published. The times were not propitious for the preservation of his work in book form, and the medical world lost him at the peak of his career.

Addenda: In an address delivered at the annual meeting of the West End Medical Society, N. Y., on Dec. 22, 1906, he said:

> In the majority of out patients, however, the danger most to be dreaded lies in another quarter. It is the onset of gradual insufficiency of the left ventricle, with secondary failure of the right ventricle, general venous stasis, and all the phenomena of an uncompensated cardiac lesion. (This under persistent high blood pressure.) Some Common Misconceptions in the Pathological Physiology of the Circulation and Their Practical Significance, *New York M. J.*, 85: 193, 1906.

BIBLIOGRAPHY

1. Janeway, T. C.: The Clinical Study of Blood Pressure, etc., New York, D. Appleton and Co., 1904.
2. Janeway, T. C.: The Diagnostic Significance of Persistent High Arterial Pressure, Am. J. M. Sc., 131: 772, 1906.
3. ———: Note on the Blood Pressure Changes Following Reduction of Renal Arterial Circulation, Proc. Soc. Exp. Biol. & Med., 6: 109, 1909.
4. ———: A Modification of the Riva-Rocci Method of Determining Blood Pressure For Use on the Dog, Ibid., 6: 108, 1909.
5. ———: The Question of Epinephrin in the Circulation and Its Relation to Blood Pressure, J. Exper. Med., 16: 541, 1912.

6. Janeway, T. C.: A Study of the Causes of Death in 100 Patients with High Blood Pressure, J. A. M. A., 59: 2106, 1912.
7. ———: Nephritic Hypertension; Clinical and Experimental Studies, Am. J. M. Sc., 145: 625, 1913.
8. ———: A Clinical Study of Hypertensive Cardiovascular Disease, Arch. Int. Med., 12: 755, 1913.
9. ———: Important Contributions to Clinical Medicine During the Past 30 Years from the Study of Human Blood Pressure, Bull. J. Hop. Hosp., 26: 341, 1915.
10. ———: The Use and Abuse of Digitalis, Am. J. M. Sc., 135: 781, 1908.
11. ———: The Comparative Value of Cardiac Remedies, Arch. Int. Med., 13: 361, 1914.

BIBLIOGRAPHIC REFERENCES

Obituary, J. A. M. A., 70: 46, Jan. 5, 1918.
Memorial Meeting To Dr. Janeway, Bull. J. Hop. Hosp., 24: 142, 1918.
Obituary, Boston M. & S. J., 178: 130, 1918.
A British Tribute to Dr. Janeway, Ibid., 178: 238, 1918.
Obituary, Lancet, 194: 80, 1918.
Obituary, New York M. J., 107: 34, 1918.
Mosenthal, H. O.: Dr. Janeway, Johns Hopkins Alumni Mag., 6: 264, 1917-8.
Barker, L. F.: Dr. Janeway, Science, 47: 273, 1918.

ICARIAN MEDICINE *

Etienne Cabet's Utopia and Its French Medical Background

Part III

HERMAN HAUSHEER

Cabet is deeply interested in all the various possible directions of cultural progress. His conception of progress is a dynamic, growing affair. Human advance is not automatic. Although the Icarians are paragons of virtue, their perfection is not static; but capable of infinite diversification and expansion. Cabet saw in the deliberately imposed ignorance of the masses and in money the two major resistants to cultural progress.

With expectancy he looked forward to the day when the advance of medicine, surgery and pharmacy would conquer the currently regarded incurable diseases. He clearly gauged the progress of medicine in terms of the conquest of diseases, the growing reduction of the rate of mortality, the diminution of pain, the perfection of old and the invention of new surgical instruments and mechanical means of improving the defective senses.

In the field of preventive medicine Cabet anticipated phenomenal results from the discovery of vaccines and serums. Future civilization, based as it is on reason, follows in its hygienic observance the findings of science. In doing so its former tradition-bound feelings of disgust are transferred to a consciously informed level. Cabet was of the opinion that in applied sanitary science both the prevention of disease and the postponement of mortality rest with the individual as well as the external environment. He felt that personal hygiene could not be very effective unless improvements in the sanitary environment, the objectives of civil engineering, were simultaneously speeded up, notwithstanding earlier mistakes.

Besides, hygiene in Icaria is largely a matter of the inculcation of wholesome habits. Among the habits that Cabet regards as peculiarly detrimental to health are intemperate eating and drinking, excessive fatigue, idleness, sexual over-indulgence and tobacco smoking.[85]

* See this *Bulletin*, 1941, Vol. 9, pp. 294-310, 401-435.

[85] Cabet, E., *Voyage en Icarie* (Paris, 1848), p. 119-120.

Cabet pours ridicule upon the habit of smoking in particular. His violent reaction against smoking and snuff-taking may be partial compensations of his bad eyesight, acquired from excessive study in school days. The physician had strongly advised him to refrain from smoking in order to guard against aggravating irritation of his defective eyes. Cabet, however, grants use of the weed as a possible therapeutic measure prescribed by the physician. Being a communistic society, seeking to create happiness for man, Icaria, is consciously laying the basis for the living of the good life. In doing so the Icarians have no need of narcotics as a stimulus. Because science shows smoking plainly to be inimical to health, not necessarily total and ascetic abstinence is required; but the criterion of the mode of its use is medically determined. Very much the identical consideration distinguishes the recommendation of total abstinence from drink and even smoking among the Komsomols, the young communists of the Soviet Union.[86]

Cabet, likewise could not be unaware of the growth of artificial inventions intended to replace the various parts of the human body lost or injured by accident or disease. However, he refrained from making special mention of this phase of surgical mechanics, as Icaria is happily free from the multiple modern hazards of accidents. Moreover, surgery increasingly is the more able to provide effective help to stutterers, mutes and sensory defectives, comparable to the educational work of Pinel and others in teaching stutterers to talk freely, the deaf and mutes to comprehend through their eyes and to speak with their fingers, and the blind to see through touch.[87] In the future society men now destined to insanity, blindness, deafness and stuttering will be saved from such a fate because of the advance in medical science.

While chloroform was discovered by three men in 1831, sulphuric ether by five in the eighteen forties, the American demonstration of anaesthesia, the name coined by Oliver Wendell Holmes, in 1846 spread rapidly through France, where on December 22, 1847, Jobert de Lamballe made the first chloroform anaesthesia. However, prior to 1840, experiments were made to relieve pain through the compression of nerves or the application of snow to the skin. It was

[86] Cabet, E., *ibid.*, p. 120.

[87] Cabet, E., *ibid.*, p. 119-120.

Marco Aurelio Severino who introduced the use of snow and ice as a local anaesthetic for operations in 1646.[88] These remained isolated experiments which were not generally used. It was particularly Cabet's medical contemporary G. Dupuytren, who made contributions to the pre-anaesthetic achievements.[89]

The written record of medicine as a social institution going back almost as far as astronomy depends for its continuous existence upon the maintenance of an organized profession that capitalized whatever crumbs fell from the table of the other branches of science.

We are today aware that mechanics, physics and chemistry together have made possible the immense Industrial Revolution, the end of which is unknown. The biological sciences and still more medicine and surgery registered more modest results because less advanced around 1800. Just as the advances of modern science were intimately bound up with the use of scientific instruments for the measurement of different physical quantities, similarly the progress of medicine depended on the use of suitable instruments. Aside from the growing medical use of scientific instruments, such as the thermometer and the balance, the direct result of the advances of physics and mathematics, clinical instruments became at intermittent periods more numerous and precise as the direct outcome of the development of the biological and medical science.

The progress in the mechanical sciences placed at the disposal of the medical profession new instruments, new problems and means of solving them. Moreover, medical men sponsored the spectacle trade, which in turn revived optical science. Revived interest in optics fostered the microscope, which revolutionized scientific knowledge of reproduction and epidemic disease. Physicians aided at the birth of two new physical sciences, when the study of gases was termed 'pneumatic chemistry,' and the measurement of heat was confined to thermometry. Growing knowledge of chemistry, heat and electricity in relation to social needs and conditions, and the continual invention of new instruments which emerged as a by-product of advancing knowledge in man's conquest of materials and of power again and again put powerful instruments of research in the hands of the

[88] Wolf, A., *op. cit.*, p. 637.

[89] Laignel-Lavastine and Raymond Molinery, *French Medicine.* (New York, 1934). Ch. IX.

medical profession. Next, industrial chemistry has made new methods of analysis available for the study of nutrition, and modern engineering has furnished a costing system for bodily work. Current electricity began with medical researches in nerves, and practical telegraphy has provided the apparatus for modern discoveries with nervous conduction. The invention of the compound microscope in the beginning of the seventeenth century and its equipment with achromatic lenses early in the nineteenth century, coincided with new phases in man's conquest of the soil. Pressure of population led to such engineering and biotechnical advances in agriculture as drainage, winter storage of roots, crop rotation, tillage, manuring and drill sowing. Improvements in the construction of the microscope between Harvey's treatise and the middle of the nineteenth century paved the way for growth in biological knowledge and its technical application to wit: definite information of the nature of reproduction in animals and plants coupled with scientific breeding; the discovery of micro-organisms paralleled by the growing control of infectious or contagious diseases; a closeup view of the material basis of inheritance and the domestication of micro-organisms as creative agents of chemical processes.

Knowledge and isolation of specific diseases was profoundly increased by the invention of tools of exploration. Corvisart was the creator of the teaching of semiology—the symptoms of disease. But it fell to the celebrated Bichat, chief surgeon at the *Hôtel-Dieu*, and to the frail and nervous Laennec, to lead the world evolution of medicine in the early decades of the nineteenth century. Although Hippocratists had long ago pointed out that certain sick people had strange noises going on in their chest, little use could be made of their perfectly accurate observations until doctors commenced to think anatomically. Aside from being the rediscoverer of auscultation (Auenbrugger had been the first who ascertained by tapping the thorax whether the thoracic organs are normal or morbidly changed), Laennec immortalized himself by the invention of the stethoscope (I see the chest). It is said that Laennec observed children listening to vibrations along a wooden beam which suggested to him the idea of the stethoscope. It was thus by sheer chance that he discovered the auditory tube which became symbolic of latter day

doctors as the urine glass was of the medieval physician. It is generally conceded that persons with a good musical ear learn percussion and auscultation far more readily than those without musical ability. Proof of this is that both Auenbrugger and Laennec were more than amateurs of music. The invention and improvements of the stethoscope led to the discovery of new diseases. In other words, the art of diagnosis became increasingly supplemented and advanced by new tools of exploration.

Invention of instruments facilitated medical advance. Achromatic microscopes became generally available between 1830 and 1840.[90] But French medical leaders did comparatively little to invent new instruments. It was the Germans who in the fifties invented in succession the ophthalmoscope, laryngoscope and the otoscope, with other scopes in the offing. With the exception of the stethoscope, some early work on the achromatic microscope and the pioneer work in photography (1827), a process of great potential significance to medicine, little was done in the way of inventing exploratory instruments of organs.

Among other medical instruments in use prior to 1840 were the *speculum uteri*, the *speculum ani*, and the *speculum auris*. "A speculum, or reflector of some sort for the better inspection of certain parts of the body appears to have been used in early times, certainly in the second century A. D. But a speculum for the special examination of the ear seems to have been first invented by Fabriz von Hilden in 1600."[91] Then there was an assistant of Esquirol, the noted humanitarian psychiatrist and head of the *Salpêtrière*, who invented the so-called *rachitom*, which facilitated the opening of the spinal cord for dissection purposes.[92] Obviously, Cabet afflicted with bad eyes, dreamed of a future society where ophthalmology will have invented all possible types of lenses for the benefit of eye sufferers; for in his day there were plenty of quack oculists. In less than two decades the great Helmholtz, in inventing the ophthalmoscope and the ophthalmometer, and in making possible for the first time a

[90] Chevalier, Ch. *Les Microscopes et de Leur Usage. . . .* (Paris, 1839). P. 13 ff; 199 ff.

[91] Wolf, A., *op. cit.*, p. 435: Beclarf et Axenfeld, *Rapport sur les Progrès de la Médecine en France.* (Paris, 1867). P. 63.

[92] Casper, J. L., *op. cit.*, p. 426.

science of ophthalmology, was to give Cabet's hope the dignity of a substantial faith. Spectacle-making now could acquire a growing prestige as a result of the technical advances in the science of the eye and in lens-making.

With equal ardor Cabet expected great things from the development of pharmacology, unquestionably the principal source of therapy in his time. Pharmacology, since the early nineteenth century began to profit greatly from the progress of chemistry. During the first quarter of the nineteenth century French chemists discovered a number of valuable drugs. M. Seguin announced in 1804 that he had isolated morphine from opium. A dozen years later, Sertuerner of Hanover, gave it its present name, described its properties and made it well known. It was an Irish physician who introduced the drug into general practice in 1844. The discoveries of Pelletier and Carenton of strychnine in 1818, brucine in 1819, and quinine in 1820 deserves special mention. The latter discovery was a major achievement in therapeutics, it being a much more effective remedy for malaria than crude cinchona. Moreover, about the same time other useful alkaloids were discovered; notably emetine, which later proved to be a specific against chronic dysentery. Thus the revolution in chemistry, made possible by Lavoisier, Berzelius, Davy and Dalton stimulated the medical sciences, as not a few of the physicians were leaders in chemical research at the time.

Pharmacological science, chemical and manufacturing industry combined their forces in the business of drug preparations. However, the few extremely valuable products of their combined efforts, did not outweigh the huge number of worthless preparations. Despite the established control bodies, the drug situation was and is still far from the ideal visioned by Cabet. Constructive drug therapy and pharmacology are still in their infancy. Moreover, it is not at all surprising that quackery continues to make an appeal to the laity, especially since the new drugs and serum products, due largely to the rapid development of organic chemistry, are tastefully advertized, endorsed by excellent authorities, and even substantiated by experimental data.

In view of the fact that the unlimited development of scientific and applied medicine is fully assured in the future society, revolutionary

changes in individual and public health were inevitable. Like his fellow-countryman Descartes so Cabet dreamed of the advances of medicine as a great civilizing influence. Sharing with his age the current medical optimism, buttressed by the considerable success in the control of the world's worst scourges—leprosy, malaria, plague, scurvy and small pox—he could not help as an imaginative social reformer to be seriously contemplating a society free from disease as well as from poverty and other ills. He gladly followed here the rather similar vision of Condorcet and Fourier, whom he personally knew, that the goal of human progress is an age in which science conquers all disease, and in which both death and old age will be indefinitely postponed.

Cabet justly anticipated from the advance in personal hygiene, prophylactic measures and sanitary science a doubling in the average span of life and in the qualitative and quantitative increase of population. The latter was particularly relevant because of the ignorance of Cabet's contemporaries as to the causes which govern the community's death rate, just as we today are ignorant of the causes which govern the community's birth rate.

Moreover, the political and economic factors that have a retarding effect upon population increase were obviously visioned as absent. Cabet sincerely felt that only a democratic and communistic social order were genuinely contributing elements in the progressive satisfaction of biological and mental needs. Not only medicine in its widest sense, but the proper functioning of all political, social and economic institutions add to the real growth of general sanity.

In pre-revolutionary Icaria, the last years of the *ancien régime*, France had a population of twenty-five million inhabitants. By 1815 her population was twenty-nine million. In 1840 it was about thirty-four million. In 1860 it was thirty-six million, reached thirty-seven million after the reunion with Savoy, then fell to thirty-six million by the loss of Alsace-Lorraine at the close of the Franco-Prussian war. In 1915 she counted forty million, still ten million less than the number visioned by Cabet.[93]

Cabet finally surprises us in paying homage to racial hygiene. Being passionately interested in preventive medicine, following it to

[93] Cabet, E., *op. cit.*, p. 121.

its logical conclusion, he was led to eugenics. Like the contemporary worshipers of the family tree and eugenicists of all degrees of rabidity, Cabet argues if dogs, horses, cows, poultry, hogs, flowers and vegetables can be bred up to some ideal, why not human beings? He does not realize that all proposed plans for man's future, the one to breed a super-race by genetic manipulation is the most difficult. Sharing with his time the ignorance of the nature of reproduction as understood today, he believed with his contemporaries that any bodily change which results from a change in the surroundings can be transmitted to the children. Whereas experiment does not seem to support this view, it was nevertheless stated in very explicit form by Lamarck's *Philosophie Zoologique*. Until the middle of the nineteenth century, the current conception of inheritance in biology was closely analogous to the legal notion that parents hand on their characters to the offspring in the same sense as the well-to-do hand on their belongings. Cabet shared with his time the view that since the doctrine of the so-called inheritance of acquired characters is a perfectly reasonable view, eugenics could readily be technically realized as an ideal. Cabet's eugenic ideal that allows society to determine the character of its future personnel is still too visionary for our day. In a general way he felt that it takes more than the best families to make a super-race; that it takes knowledge, purpose and morale.

Cabet lived at a time when eugenics had not yet reached the stage of violent and controversial partisanship of today. Not a few of its modern devotees use eugenics as a means of camouflaging their social prejudices, class and racial antipathies, instead of sticking strictly to science, whose knowledge they wish to apply for the improvement of the race.

According to Dr. C. P. Blacker " the province of positive eugenics comprises the bulk of the population. Its tasks are to minimize the disabilities and handicaps attaching to the large as against the small family, and at the same time to spread among normal people a social conscience favoring fertility." [94] Cabet would have agreed with the first and third statement, but not with the second.

[94] Cattell, R. B., Cohen, J., Travers, H. M. W., *Human Affairs*. (London, 1937). P 122.

Moreover, with regard to negative eugenics, Cabet advocated the restriction of fertility of persons suffering from specific diseases and defects of a definitely hereditary character; while he shared with his time the ignorance regarding the eugenic unfitness of the group that procreates high grade mental defectives and persons of marked subnormal intelligence.

Few minds realize that questions as to whether a community wants a population of athletes or high general level of intelligence cannot be answered by the eugenics minded biologist. It is up to the community and its representatives to decide. In other words, answers to eugenic problems depend on economic and political orientation. Icaria, being a communistic democracy, seeks eugenically the perpetuation of those individuals who have the desirable qualities for its kind of social order. The survival of its kind of community depending on factors making for cooperation, solidarity, fraternity; social policy prescribes the sort of answers it poses to eugenics.

The popularly appointed Icarian eugenics commission is a planning board that not only has charge of the scientific and experimental work, but has executive power to carry out these changes in racial hygiene which have been fully substantiated by experimental genetics. Cabet's hope of the rational management of human reproduction is in accord with the best in utopian tradition. The startling thing about the Icarian Commission for Racial Improvement is ostensibly its unlimited scope of power to enact eugenic reforms. Obviously, in a sanely and rationally progressive social order like Icaria, such delicate reforms are only decided after exacting scrutiny. Nevertheless, the scope of power of the racial hygiene board is so much vaster than that of the guardians of Plato's immortal *Republic*. In Icaria eugenics is applied with a vengeance to the whole population. The eugenic measures are not imposed from above as in a dictatorship, but they are popularly sanctioned. The executive power of the Commission for Racial Improvement is all the more effective on account of its deliberately sought national and democratic approval.

Cabet had, however, no idea how complicated human heredity is. His ignorance here is pardonable, for the biological sciences were as yet little developed in his day. But even today ardent eugenicists, who should know better, persist in making us believe that human

heredity is a simple thing. In fact, man is genetically much less satisfactory than a Jersey cow, Percheron horse, and above all, still less than the fruit fly *Drosophila melanogaster*.

Geneticists have demonstrated the germinal bases for a wide varity of characteristics of plants and lower animals; flowers, shapes of leaves, sizes of beans, susceptibilities of diseases depend upon the presence of specific determining factors in the germ plasm. These scientists, however, recognize the relatively limited scope of the knowledge of the relation of human traits to elementary germinal characters. They admit that genetics is still in the infantile stage and correlates only a few facts yet. Biometrists have in turn reached certain conclusions as to the effect of inheritance in influencing height, color of eyes, shape of head, length of arm, reproductive fertility, and some other anatomical and physiological features of men. Both geneticists and biometrists generally acknowledge that their understanding of human heredity is relatively inexact and incomplete because of the difficulty of tracing the hereditary mechanism of human features. To start with there are no hereditary pure lines among men. Then, they are such slow-breeding animals that geneticists cannot control their observations in experimental breeding. Biometrists equally acknowledge their uncertainty as to the full effects of heredity in determining man's mental and moral traits. Their doubt is due largely to the difficulty in defining and appraising these traits and isolating them from environmental influences. Most geneticists are now agreed that intelligence and morality are not Mendelian in nature. They are not unanimous in their judgment as to the total weight of heredity in determining feeblemindedness, insanity, habitul criminality, vagabondage, chronic alcoholism and sexual irregularity. Moreover, no one knows what type of person will be desirable in future society, nor knows the means of breeding and perpetuating that type. A genius is much more likely to go insane than a ditch-digger, according to available records. Is there no need for a few dull people to perform a few routine tasks efficiently? The overhasty therapy of eugenic planners may for instance well multiply the functional disorders of our social system. A possible sudden and steep rise in the intelligence quotient of our present rising generation conceivably might cause a sanguine revolu-

tion. Moreover, we do not yet know how most socially relevant innate characters are inherited. Mental defects are still unpredictable. The lowest mental groups do not perpetuate as well as normal individuals despite the alarmists to the contrary. Genetic authorities agree that sterilization of the unfit will not materially raise the normal plane of the nation. Modern genetic knowledge if recklessly applied may, in fact, do more harm than good.

It is a social duty to marry in Icaria unless eugenically unpermissible. In a medically ideal society, Cabet felt there are no bachelors and spinsters, except those who, because of their eugenic unfitness, have the exclusive right to the profession of medical nursing. In most instances the eugenics board prohibits marriage between members of the immediate family; however, it does not inflexibly adhere to the ancient taboo of sister-brother marriage. But as this type of marriage is eugenically bad if recklessly allowed, the commission does everything in its power to encourage family, regional and racial intermarriage. Like the French or Latins, the Icarians betray no antipathies toward intermarriage of members of different races. They are not obsessed by the opinion commonly held that only members of certain races can form a society of the highest type. Cabet held that all races are equal in their innate capacities, and the superficial inequalities among them, he argued, are due wholly to differences in social opportunities. Removal of these will create those cultural traditions that are basic in the production of genius and talent.

What is possible but hardly probable is that the decisions of the Icarian racial hygiene board against certain marriages apparently encounter no obstacles on the part of the individuals involved. How may we account for this remarkable situation? In Icaria scientifically and medically enlightened public opinion and education have reached such a potent height that no infraction ever occurs.

It was Cabanis (1757-1808), one of the noted physiological *idéologues*, a disciple of Condillac, who held that the human species is susceptible of great physical perfection, that there is an intimate relationship between physiology and morality. Cabet subscribes to both ideas, so greatly cherished by all generations of ideologists. He equally opines that bodily beauty and intelligence are diametrically

affected by extreme economic situations. The children of the rich are more beautiful and intelligent than those of the poor. Hence equalization of the environment will bring about an equality of physical beauty and intelligence. Moreover, most of the ideas on race improvement by Cabet were property of the intellectual climate of his day. The essentially modern ultra-behavioristic view that environmental changes have definite hereditary effects, and that there were techniques by which superior men would be born, were popularly accepted notions.[95]

It was impossible for Cabet to anticipate the tremendous difficulties that eugenics was to encounter as a result of the progressive development of the scientific study of heredity. In sharing the current view of his day that just as the mathematical and physical sciences yield certain and proven truths that have more or less immediate practical application, he naturally inferred a like situation was bound to prevail in the medical field. It was after his time that medical science reached the proper perspective regarding the degree of validity of its various experiments and discoveries. Today we know that there is nothing in medicine and drug therapy absolutely verified and unqualifiedly true. The hope of Cabet that medical and biological science would in time attain the comparable certainty of physics, chemistry and mathematics, is still in the distant utopian future.

Medicine since Cabet's day has grown less cocksure and fanatical. There is no longer that reckless mania for medical systems and schools that demand the ardent enthusiasm and blind faith of individuals. There has been a decline in the credulous fanaticism of medical schools and units whose pattern of conduct was strikingly like that of an ingrown religious sect. Today the lines of division between the medical factions are much more fluid and tenuous.

In the history of medicine the ascending march has not always been in a straight line. It has at times been interrupted by a systematic dogmatism as expressed in the growth and dominance of certain doctrinal systems. In our days, with the prompt exchange of ideas, immediate criticism and rapid communication, systems and doctrines

[95] Cabet, E., *op. cit.*, p. 121-123.

have little if any chance to obstruct the general progress. Indeed, the period of medical systems definitely passed after Cabet's time.

In viewing Cabet's far-sighted medical vision as a whole, we surmise that he subscribed to an eclecticism in medicine, which for his day was revolutionary. He, therefore, was of the belief that science is hindered by the existence of sectarian schools. Science no longer consists in adherence to an exclusive central idea. Rather it is composed of all the ideas and discoveries with which the creative genius of men has successfully enriched humanity. The aim of eclecticism is to destroy an exclusive system and draw up an inventory of all the fields of knowledge. Consequently, medicine instead of being confined to one system, is composed of divergent working units; and general science, being eclectic, is open to all. Eclecticism is therefore superior to all systems. If medical eclecticism seems implied in Cabet's medical utopia, it is a phenomenon comparable to the philosophical eclecticism of Victor Cousin, his fellow contemporary. In hope Cabet lived the day when the gap between medical science and medical practice, between the different medical schools and services would be bridged, a hope, which is being slowly yet surely realized.[96]

[96] The author of this study wrote the above as a part of a research project on Cabet and the Icarian movement in connection with the Federal Writers' Project in the State of Iowa.

LAUDANUM IN THE WORKS OF PARACELSUS

HENRY E. SIGERIST

For centuries laudanum was the common name for an alcoholic tincture of opium. The prescription of Sydenham became the most famous and was in use until recently. In addition to opium it contained saffron, powder of cinnamon and of cloves.[1] Laudanum was used before Sydenham [2] in a great variety of compositions and the general view is that credit must be given to Paracelsus for having introduced the opiate laudanum into therapy and for having given it its name.

The Oxford Dictionary says:

> Laudanum used by Paracelsus as the name of a medicament for which he gives a pretended prescription, the ingredients comprising leaf-gold, pearls not perforated, etc. (*Opera* 1658 I. 492/2). It was early suspected that opium was the real agent of the cures which Paracelsus professed to have effected by this costly means; hence the name was applied to certain opiate preparations which were sold as identical with his famous remedy.
>
> It is doubtful whether the word as used by Paracelsus was a fanciful application of *laudanum* a med. L. variant of *Ladanum*, or was suggested by *laudare* to praise or by some other word, or was formed quite arbitrarily.

Haeser in his chapter on Paracelsus makes the following remark: [3]

> Zu den heilkräftigsten Mitteln zählte Paracelsus die Opiate, besonders ein von ihm erfundenes "Laudanum."

Garrison repeats the statement quoting Haeser,[4] and once an assumption is accepted by authoritative text-books it goes a long way.

[1] Sydenham's recipe was:

Sherry wine	.....	1 pound
Opium	.....	2 ounces
Saffron	.....	1 ounce
Powder of cinnamon	.....	āā 1 ounce
" " cloves	.....	

See *The Works of Thomas Sydenham*, Trans. by R. G. Latham, London (Sydenham Society), 1848, Vol. I, p. xcix.

[2] Testimonies from English literature from 1602 on are given in the Oxford Dictionary.

[3] Heinrich Haeser, *Lehrbuch der Geschichte der Medicin und der epidemischen Krankheiten*. Jena, 1881, Vol. II, p. 99.

"Ich hab ein Arcanum, heiss ich Laudanum, ist über das alles, wo es zum Tod reichen will." *Grosse Wundarznei*, I. Tr. 3.

[4] Fielding H. Garrison, *An Introduction to the History of Medicine*. Philadelphia and London, W. B. Saunders Company, 1929, p. 206.

I confess that I never felt quite convinced that Paracelsus had introduced this kind of laudanum—for two main reasons. Paracelsus uses opium very often. He describes it and gives a large number of prescriptions that contain it. Hence, it is hard to believe that he should have concealed in a secret remedy a drug that he openly used so very frequently. The other reason is that Paracelsus mentions laudanum very often as an ingredient of recipes where it cannot possibly have any connection with opium.

In an attempt to solve the question I have examined many passages in the works of Paracelsus where the word laudanum occurs. Such a study is difficult because the edition of Sudhoff cannot be used as long as it has no indices. I worked, therefore, mostly with the edition of Huser.[5] It has good indices, but they are far from being exhaustive; although I went through the ten volumes page by page I cannot guarantee that I did not overlook some significant passage. What I found, however, seems to give a well-rounded picture.

I.

What did Paracelsus call laudanum in the many recipes where the word occurs? A clue is given by a passage (Huser VI, 250) of the book *De praeparationibus*. In Book II, De Nascentibus ex Terra, Treatise I, De praeparationibus Terebinthinarum et Gummorum Paracelsus gives the following list:

Nomina sunt ista: Ex Gummis, Opopanacum, Galbanum, Serapinum, Bdellium, Storax utraque, Laudanum, Mastix, Myrrha, Thus.
Ex Resinis: Balsamum, Terpentina, Resina.

In other words, laudanum was a gum like mastic, myrrh and the other gums mentioned in the list. The word laudanum is the mediaeval form of ladanum [6] and Paracelsus, like other Renaissance

[5] Basel, 1589-1590, 10 vol. Unless indicated otherwise the references are all to this edition.

[6] Du Cange, *Glossarium*: Recipe policariae, bedellii, mirrae, laudani (B. N. MS. Lat. 10272, p. 171).—Matthioli *Commentarii in libros Dioscoridis* (Venetiis 1570), p. 142: Ladanum, quod vulgo alii appellant Laudano, alii vero Odano. P. 143: Quod vero λάδανον Graeci, Latini item Ladanum vocant: Mauritani, Leden, sive Laden: Itali, Laudano, et Odano: Hispani, Xara.—Leonhard Fuchs, *Paradoxorum Medicinae Libri tres* (Parisiis, 1555), f. 39^{v}: Ladanum, vel ut Barbari addita litera loquuntur, Laudanum.—Michael Toxites, *Onomastica II* (Argentorati 1574), p. 75: Laudan, Labdanum, ein ölig feuchte vom kraut Lada inn Cypern. Gall. Ladan, ou humeur huileux du l'herbe Lade en Cypre. Ital. Laudano, adano. Hispan.

writers, very frequently used mediaeval terms, opopanacum for opopanax, storax for styrax, etc. The word ladanum occurs in several Paracelsian recipes [7] but the different spelling may be due to the editor. As a rule Paracelsus called the drug laudanum.

Ladanum or ledanum was the resinous secretion of the leaves and flowers of several varieties of Cistus.[8] The drug is discussed very often in ancient pharmacological literature. Dioscorides has a long chapter on it.[9]

There is also an other kinde of Cistus called of somme Ledum, a shrub, growing after ye same manner that Cistus doth, but it hath longer, & blacker leaues, contracting somme fatnesses in the Spring. The strength of whose leaues is binding, making for all thinges that Cistus doth. Now, that which we call Ladanum, is made of this plant. For the Hee Goats, & shee goates, feeding on the leaues heereof, doe manifestly beare away the fatnesse of them on their beards and on their thighes, because it is of a viscous nature, which taken off thence they straine, & hauing fashioned them into little balls, lay them vp in store. Somme also doe drawe little cordes across the shrubs, and taking off ye pinguous matter that cleaves to them, soe forme it. The best of it is that which is of a sweet smell, sommewhat green, easily made soft, fatt, vnpartaking of sand, or foulenesse, rosinie. And such is that growing in Cyprus, but the Arabick & Lybick is of lesse esteem. It hath an astringent warming, mollifying facultie, as also of opening the Oscula vasorum. It staies the falling haire, being mixed with wine, & Myrrhe, & oile of Myrtle. It also makes scars looke ye handsommer being anointed on with wine. And it cureth the paines of ye eares, being dropt in with Hydromel, or Rosaceum. It is suffumigated for casting out of ye Secundae, & it doth cure the hardnesses that are in the wombe, being mixed in a Pessum. And it is profitably put in to Anodyna, & to cough-medicines, & into Malagmata. It stops the belly also, being dranck with old wine, and it is also vreticall.

Galen also devotes a whole chapter to the description of the drug and its qualities.[10] He calls it hot in the first degree but so completely that it is almost in the second degree.[11] It is slightly astringent and

Xara. Aledana, Confita rubea, Cimubath, Cithus, Edem, Laudanum, Λάδανον, Λῆδιν, Λήδανον, Leden.

[7] V, 218, 230, 237, 242. The index refers to laudanum.

[8] G. Dragendorff, *Die Heilpflanzen der verschiedenen Völker und Zeiten*. Stuttgart, 1898, p. 446.

[9] Ed. Wellmann, Vol. I, p. 88 f. The translation is that of John Goodyer (1655), ed. by Robert T. Gunther, Oxford, 1934, p. 68.

[10] Ed. Kühn, XII, 28 f.

[11] About Galen's pharmacological theories see Henry E. Sigerist, *Studien und Texte zur frühmittelalterlichen Rezeptliteratur*, Leipzig, 1923, p. 11 ff.

has very subtle particles. Therefore it is moderately softening, driving and digestive. Hence it is indicated for diseases of the uterus and holds back the falling hair.

The drug was used throughout the Middle Ages and the Renaissance. Matthiolus in his commentary to Dioscorides first published in 1544 complained that it was difficult to obtain the drug pure because it was frequently adulterated. The best he could buy was in Venice where it was sold by perfume makers.[12]

Let us now examine a number of Paracelsian passages where laudanum occurs. In *De Gradibus et Compositionibus Receptorum ac Naturalium*, Lib. II, Cap. VII (Huser VII, 13) laudanum is listed among the drugs *quae ex terra proveniunt*, in other words, that consist of the element earth, and it is described as being hot in the first degree.

Laudanum occurs in many recipes without specification, so in the following:

Descriptio pillularum de Laudano.[13]

Rec. Laudani drach. semis
Rutae,
Absinthii, ana drach. i.
Theriacae optimae, quantum satis pro incorporatione. (Dosis grana quinque, nec ultra.)

Contra hydropisim ex lacte.[14]

Rec. Serapini,
Laudani,
Galbani, ana drach. i. semis
Lapidis lazuli,
Hermodactylorum ana drach. semis.
Conservae rosarum, q. s. pro incorporatione:
Dosis aureus semis.

In a number of recipes the laudanum used is to be *laudanum purum:*

[12] Matthioli *Commentarii in sex libros Pedacii Dioscoridis Anazarbei de Medica materia.* Venetiis, 1570, p. 142: Ladanum, quod vulgo alii appellant Laudano, alii vero Odano, tametsi plerunque impostorum malitia adeo sabulo, et aliis adulteriis sit vitiatum, ut nihil valoris praestet; ego tamen praestantissimum saepius Venetiis emi ab unguentariis, qui odoramenta conficiunt. Verum apud pharmacopolas, qui medicamenta nobis parant, Ladanum, quod syncerum, purumque sit, rarissime reperitur: cum eorum plurimi potius curent, ut rem minoris emant, quam ut seligant legitima ab adulterinis. quod tamen iniquum est, inhumanum, ac detestabile crimen.

[13] III, 268. The pills were used for fever originating from the stomach.

[14] III, 324, 327.

Cura Pleuresis quae in regione Cerebri.[15]

Rec. Laudani puri, scrup. i.
Olei de musco, grana tria,
Camphorae, grana septem: Fiant pillulae cum aqua de spicula: Dosis a granis sex usque ad septem, vel novem secundum cohob.

Compositio Diaprunellae.[16]

Accipe aquarum prunellae lib. i.
Laudani puri drach. ss. Misce, fiat haustus secundum cohob, & gargarismus cum mundificatione linguae, & est ultimum medicamen in prunella.

Praeservativa in rubea.[17]

Rec. Laudani puri scrup. i. ss.
Aquarum corallorum rubeorum,
Spodii, ana drach. ss. Liquoris myrrhae,
Thuris, ana drach. iii.
Macis quantum satis est. Fiat massa pillularum.
Dosis grana quatuor.

Descriptio ad Synoviam cerebri.[18]

Rec. Carabe ex asphalto,
Laudani puri,
Liquoris Lune, id est, argenti, an. kist unum.
Vini essensificati per alcool, ad pondus omnium.
Dosis secundam guttam per aures.
Wann es ihnen ex cerebro kompt, muss man per aurem einschütten.

Cura praedicta in omnibus speciebus pleuresis valet, nisi in pleuresi ex corde, ubi haec descriptio administretur:[19]

Rec. Laudani puri scrup. i.
Musci gr. v.
Camphorae gr. vi. fiant pillulae cum aqua de spicula, Dosis gr. vi. vel vii.

Gargarismus.[20]

Rec. Compositum diaprunellae, Aquarum prunellae lb. i.
Laudani puri drach. ss.
Misce, fiat haustus secundum Cohob, cum mundificatione linguae: & est ultimum medicamen in prunella: alternatim illa aqua iam in potu, iam in gargarismo utere, prius frictione linguae praecedente.

From Matthiolus we know that it was difficult to obtain pure ladanum and that it was frequently mixed with sand. We should

[15] III, 308.
[16] III, 309.
[17] A prescription for jaundice, III, 350.
[18] III, 400.
[19] V, 218.
[20] V, 237.

assume, therefore, that laudanum purum was ladanum from which impurities had been removed. As a matter of fact there is a passage in the *Scholia in Libros de Tartaro* (V, 246) that indicates this:

Laudani puri id est liquoris separati puri ab impuro.

This purification was in all probability obtained through distillation. Leonhardt Thurneysser's Onomasticum explains: [21]

LAUDANUM purum. Das ist von Laudano dissolvirt und per descensum distilliret, als dann ist der Safft am bodem.

The Onomasticum of Michael Toxites holds the same view: [22]

Laudanum purum dicitur, non praeparatum cum aliis, sed quando dissolutum distillatur in liquorem, wan der gummi so man Laudanum nent, zerlassen, und undersich in ein liquorem distillirt wirdt: Gallice Ladan solu et distillê en liqueur.

This all conforms with the scholia to the *Libri de Tartaro* (V, 230 and 242):

Laudanum per descensum destillatum, oleum reddit.
Si laudanum destillatur per descensum, manet liquor in fundo.

Liquor laudani, the pure ladanum obtained through distillation is mentioned as such in a number of recipes, for instance:

Rec. De liquoribus laudani scrup. i.[23]
Croci, gr. iii. (al. scrup. iii.)
Aloepatici, drach. iii.
Fiant pillulae communes, cum aqua absinthii.
Dosis grana septem.

Rec. Olei papaveris unc. ii.[24]
Olei hyoscyami unc. ss.
Laudani liquefacti in oleo amygdalarum amararum drach. ii.
Misceantur, fiat potio oleata, cuius dosis ab uncia una usque ad unciam unam & semis.

In another recipe extractum laudani is to be used, which is probably the same as liquor laudani (III, 351):

Praeservativum utriusque generis [25] (*seu generale.*)

Rec. Liquoris myrrhae,
Thuris ana drach. iii.

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[21] Ἑρμηνεία. *Das ist ein Onomasticum, interpretatio oder erklerunge Leonhardt Thurneyssers zum Thurn.* Uber die frembden und unbekanten Wörter, Caracter und Namen, welche in den schrifften des Tewren Philosophi, und Medici Theophrasti Paracelsi, von Hohenheim gefunden werden. Berlin, 1574.

[22] *L. c.*, p. 452.

[23] III, 328. See also V, 221, 223.

[24] III, 258.

[25] Sc. rubeae et nigrae icteritiae.

Laudani extracti,
Thassorum, ana scrup. ss.
Olei nucis muscatae quantum sufficit, pro bolo. Dosis a scrup. i. ad scrup. ii. ss.

Ladanum is also prescribed as *Laudanum praeparatum*, thus in a recipe for black jaundice (III, 350):

Praeservativum in Nigra.

Recipe Lapidis lazuli,
Succi sileris montani, ana drach. i.
Laudani praeparati scrup. iiii.
Olei de nuce muscata quantum sufficit pro incorporatione. Dosis a drach. ii. ad drach. iii.

The same term occurs in a prescription for the treatment of compressiones thoracis (III, 263, 266, V, 231):[36]

Rec. succi de suffo: id est, panis porcini unc. vi.
Laudani praeparati, unc. semis.
Olei nucis muscatae unc. semis.
Fiat mixtura.

Again the question arises what Paracelsus meant by *laudanum praeparatum*. The Onomasticum of Toxites says (p. 453):

Laudanum praeparatum, Wan man zu dem gummi andere species wie in apotecken der brauch ist, zusezt.

The Onomasticum of Thurneysser is more explicit:

LAUDANUM praeparatum. Ist wann zu reinem Laudano Ambra unnd Muscaten blumen gethan wirdt, nemlich zu einem Quintlein rein Laudano iii gran. Ambrae, unnd 6. gr. Muscaten Blumen, dann diese dinge praeparieren in.

In Book II of *De Morbis ex Tartaro oriundis*, Chapter I, De Orexen, vulgo der Sodt, Paracelsus has the following Cura (III, 258):

Cura.

Resolve in aquam usneam, impinguesce locum, et sanabitur.
Descriptio Resolutionis est ista:
Rec. Laudani praeparati drach. i.
Sacchari candi drach. i. semis.
Ambrae grana tria,
Macis grana sex.
Fiant pillulae cum aqua menthae: dosis, numero tres.

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[36] Compressiones thoracis voco quod alii vocant debilitatem digestionis, frigiditatem stomachi, nauseam, appetitum caninum, ardorem stomachi, syncopin stomachi, vaporem foedum: quod haec omnia ex vitio Tartari veniunt, et per Tartari curam curantur: ideo uno nomine complector, voco compressionem thoracis.

The Author's Notes add to this prescription (III, 261):

Laudanum est capitale in hoc Recepto. Zuccarum et ambra non multum proficiunt.

The Scholia, however,—the authorship of which is uncertain—explain (V, 242):

Ambrae, macis. haec duo laudanum praeparant.

This conforms with Thurneysser's interpretation but is probably not what Paracelsus meant. Indeed, he would not have added ambra and macis [27] to the recipe if laudanum praeparatum already contained the drugs. Another prescription seems to give the correct explanation (III, 316):

Mundificatio.

Rec. Laudani puri, id est, praeparati unc. semis.
Liquoris corallorum scrup. ii. fiat mixtura in formula pillularum communium. Dosis a scrup. semis ad scrup. i.

According to this prescription laudanum purum and laudanum praeparatum were one and the same. Ladanum was prepared by being purified through distillation. Hence I am inclined to believe that Paracelsus used both terms indiscriminately, meaning the same, and that it was only later that his disciples and followers made a distinction and declared that laudanum praeparatum was a composite remedy containing ambra and macis.

I think there can be no doubt that in all passages mentioned so far the laudanum of Paracelsus was nothing else than the gum ladanum used since antiquity. But now the question arises whether Paracelsus used the term laudanum also to designate something else, a composite remedy, and if so, what was this remedy?

II.

In the *Grosse Wundarznei* of 1536, Book I, Treatise 3, in the chapter dealing with the treatment of snake bites Paracelsus after discussing several remedies says:

ich hab ein archanum, heiss ich laudanum, ist uber das alles wo es zum tot reichen wil, das in seinem capitel verzeichnet wird.[28]

[27] About macis see Matthiolus, *op. cit.*, p. 120.

[28] In the Sudhoff edition, Vol. X, p. 165. The edition Ulm 1536 does not contain the passage (Sudhoff, p. 666).

In other words, Paracelsus says that he has a remedy that he calls Laudanum which is superior to the others in cases of threatening death and which he will describe in its chapter. The chapter is not to be found but then we know that the *Grosse Wundarznei* was to have five books of which only two were completed.

Paracelsus calls the remedy an arcanum [29] which does not help in identifying it. He has written a great deal about this cŏncept.[30] Arcanum is the inherent virtue of a substance which nothing but experience reveals. It is totally different from the Galenic concept of elementary quality. In a recipe that contains the gum ladanum it is said (III, 266): In his rebus non considerantur gradus vel complexio, sed arcanum considerandum. Arcanum corresponds to a certain extent to our modern concept of the active principle of a drug. A drug has its arcanum and arcanum is also the designation of a drug or a compound remedy that has a marked effect on the body.

The *Grosse Wundarznei* was never finished but Paracelsus had given the prescription of his laudanum previously while he was lecturing in Basel in the winter of 1527-1528. He gave a course on special pathology and therapy which he intended to publish some day as *Libri Paragraphorum*. In one of the note-books preserved we find the following prescription (V, 258): [31]

Dissolutis [32] *iam deploratis utere isto laudano.*

Rec. Orizei foliati (geschlagen Goldt) unc. semis.
Margaritarum non perforatarum drach. ii.
Asphalti, Florum antimonii ana drach. semis.
Croci orientalis drach i. semis.
Myrrhae Romanae, Aloes epatici ana ad pondus omnium.
Reduc ad formam, Dosis a gran. 4. vel 7. ad 10.

It was a prescription for cases where death was threatening

[29] Or archanum in the old spelling.

[30] See, for instance, Archidoxae, Lib. V (VI, 42 seq.). One of the best and simplest definitions is the one of Gerard Dorn in his *Dictionarium Theophrasti Paracelsi*, Francofurti, 1584, p. 18: Arcanum in genere, ut occultissimum quid significat, Paracelso pariter occultam in rebus naturalibus virtutem incorpoream, et ceu vitae perpetuae ac immortalis e coelo in eam derivatae participem, quae multiplicari possit arte spagyrica supra priorem conditionem.

[31] Sudhoff, V, 285.

[32] Dissoluti were patients suffering from diarrhoeas, dysentery and similar diseases. The recipe is for dissoluti iam deplorati, that is for patients already given up.

containing the heroic drugs gold, pearls and antimony—but no opium.

The treatise *De vita longa* has also a chapter De Dissolutis (VI, 165). The remedies are again gold and laudanum perlatum. The latter may well be the prescription just mentioned that contained pearls as one of its chief ingredients. The treatise has a special chapter on pearls (VI, 174-175) in which is said nihil magis esse Auro propinquum Perlis.

The treatise *Von der Bergsucht* has an interesting chapter in which Paracelsus expounds homeopathic principles (V, 17 ff.). Arcanum contains both, evil and good. What causes jaundice also cures it. He then continues:

So der particularis Medicus einem jeglichen sein sonder Diet und Recept suchen will, dasselbe suchen wirdt zu lang dem Krancken: dann nach arth diser Cur und Ordnung nimpt sich der ursprung Laudani, das ist materiae perlatae, das so viel ist, als wenn ein Perlin aussgezogen wirt, und dasselbe Perlin heilet nun dieselbe Kranckheit, so auss seinem bösen entsprungen.

There can be no doubt that laudanum is described here as a pearl remedy. The same is in all probability the case in a passage at the end of the book (V, 71-72) where it is said that certain serious diseases can not be cured by the usual prescriptions but require the great arcana such as laudanum or pearl remedies or similar arcana.[33]

The same laudanum is probably meant in a concilium of 1538 (V, 123):

Reliqua sunt, Oleum Benedictum, Laudanum, Perlarum arcanum, Balsamum, iis utaris, ut dixi.

Laudanum was by no means the only Paracelsian pearl remedy. A great variety of them are described.[34] Pearls were ground or calcined, mixed with vinegar, alcohol or other substances and used in many combinations.

And now a seemingly dark passage becomes clear. In *De Gradibus et Compositionibus Receptorum ac Naturalium*, mentioned before, Paracelsus lists laudanum as being *ex terra, primum gradum caloris occupans* (VII, 13). This laudanum, as we saw, was the gum. But then, a few pages later (VII, 31) he lists materia laudani as being

[33] . . . sondern den grossen Arcanis zubefehlen, als dem Laudano, oder den Materien Perlaten und dergleichen.

[34] So IV, 108. See the indices of Huser.

ex terra, frigida. This obviously cannot be the same laudanum, since the same drug could not be both, hot and cold. Paracelsus in addition correlates this materia laudani with the heart. What does that mean?

According to Paracelsus certain drugs like certain diseases are not only characterized by their element and quality. Herbs that are cold and from earth are not universally good for diseases of hot quality. There are seven kinds of diseases and also seven kinds of heat and cold. Here Paracelsus reveals himself as a follower of the astrologists. The seven kinds are determined by the planets and their corresponding organs: Sun–heart, Moon–brain, Venus–kidneys, Saturn–spleen, Mercury–liver, Jupiter–lungs, Mars–gall bladder. Materia laudani refers in all probability to the pearl remedy. It is from earth and cold like Materia perlarum and Materia Saphyrorum with which it is listed together and they all correspond to the heart like the hot Essentia Melissae and Essentia quinta auri. Opium, however, belongs into a totally different category. The genera papaveris are not listed among the great arcana but among the drugs that are *ex terra, in primo gradu frigida* (VII, 15).

I think the texts discussed so far are sufficient to make evident that Paracelsus designated two different things by the term laudanum:

1. The gum ladanum of the classical pharmacopoeia.

2. A compound remedy—an arcanum in his own terminology—that contained pearls as one of its chief ingredients.

I cannot find any connection, however, between laudanum and opium. I repeat that Paracelsus used opium very frequently. The prescriptions that contain opium, sucus, liquores or semen papaveris or oleum de papavere are innumerable. He never made a secret about his opiates. He was not the mystery man as whom he has been pictured so often. He had his own terminology because he was an independent thinker, but he explained it whenever he had a chance. If some of his concepts are sometimes dark it is largely due to the fact that many of his books were never written or remained mere fragments.

III.

One last problem must be discussed. If the laudanum of Paracelsus had nothing to do with opium, who was responsible for using the term in designating an opium preparation?

I think this must be attributed to the Paracelsists, the disciples, followers and commentators of Paracelsus. When he died in Salzburg in 1541 only a few of his books had been printed. He left manuscripts finished and unfinished, originals written in a hand that was hard to decipher, and copies. But there was also an oral tradition. Many people had known him, physicians, laymen, adventurers. They claimed to have seen him treat patients, to have received secret recipes from him. They were inclined to attribute their own prescriptions to him in order to give them more authority. Wild legends arose and Paracelsus became the miracle doctor.

The article on Laudanum of Michael Toxites is most characteristic. In his Onomasticum [85] he mentions the gum laudanum as laudanum purum and laudanum praeparatum. But then he has a two-page article on the Laudanum Theophrasti which is neither ladanum nor opium but simply a miracle drug. It cures every disease with the exception of leprosy and even resuscitates the dead. "It consists of two things and nothing greater than these can be found in the world." What these two things were is not said. It was a secret. The whole story is so typical of the formation of such legends that I am reprinting it. It reminds one of the Legenda Aurea, because it has all elements of style of the episodes that we are accustomed to find in the Vita of a saint:

Laudanum Theophrasti, non ladanum, neque opium est, ut quidam alioqui vir doctus, et mihi amicus nimis iracunde, et imprudenter admodum de Theophrasto scripsit. Effectus enim longe aliud docuit, non enim summo hoc arcano homines occidit, sed iam iam mortuos in vitam revocavit: quod etiam Oporinus noster, piae memoriae mihi confessus est: ipsum hac medicina miracula praestitisse: se etiam Theophrasti nomine multis exhibuisse: quorum quidam vitae omnino, alii vero qui serius usi sunt, rationi aliquot diebus restituti fuerunt: praesertim in peste. Dixit etiam mihi se ipsum aliquando sumsisse praecipitatum, cumque eum uxor ad iracundiam commovisset, unde nimis incaluerit: properasse se ad fontem, bibisseque liberalius aquam frigidam, inde venenum Mercurii ita fuisse excitatum, ut toto corpore intumuerit, medicique morti eum praesente uxore adiudicaverint. Quod cum ex astantibus,

[85] Strassburg, 1574, pp. 450-453.

visu iam amisso, audisset, mox parum de laudano, quod secum adhuc a Theophrasto ipsi datum, habebat, in os imposuisse, inde in dulcissimum somnum per semihoram, aut paulo amplius incidisse, ubi evigilaverit, tumorem, morbumque omnem, quae peculiaris huius Medicamenti natura est, admirante uxore, et ceteris qui praesentes erant, evanuisse. Haec non ab aliis sed ab ipsomet Oporino, qui mihi fraterno amore iunctus fuit, in prato ad Rhenum cum eo deambulans, cum Basilea Argentoratum una navigaremus, audivi. Liberalius multa Andreas Iociscus in sua oratione recitavit: quaedam etiam falsa posuit: quin et Oporinum paenituit Epistolae, quam ad D. Wierum de Theophrasto scripsit, dixitque eodem tempore mihi, ab ipso fuisse emendicatam epistolam neque eam scripturum fuisse si scivisset, ita in vulgus prodituram. Quamquam praestat eum scripsisse, plura enim in ea sunt, quae ad laudem Theophrasti pertinent, quam ad vituperium, et quae ibi vituperat, longe aliter etiam intelligenda sunt, quam vel Oporinus vèl alii interpretati sunt, quae brevitatis causa omitto. Est igitur Laudanum Theophrasti medicina laudatissima quae non ex rebus puerilibus, non venenosis, non opiatis, sed omnium quas orbis habet praestantissimis quae vitam conservant, conficitur: et in omnibus morbis efficax est, praeterquam in Lepra. Ita appellata est a Theophrasto, quod omni laude dignissima esset. Duae enim saltem res sunt, ex quibus constat: maiora his inveniri in mundo non possunt. Quare vera esse scio, quae de hac medicina scribo, falsa et mentita, quae olim adversus hoc laudanum quidam ediderunt, qui ironice Laudanum sanctum appellaverunt. Vivit adhuc testis locuples, senex venerandus Georgius Veterus, qui adhuc hodie concionatorem agit Eberbachi, in ditione comitum ab Erpach: illum accedite vos Theophrasto mastigae tribus enim tantum milliaribus ab Haidelberga distat. Is tum temporis cum Theophrasto Basileae vixit, quando nobilem Canonicum, et alios multos curavit, is medicamenta Theophrasti nomine administravit. Si quid mentior, nolo mihi patrocinetur. Haec de Laudano Theophrasti propter exteras nationes prolixius commemoravi, ut intelligant Theophrasto fieri iniuriam, dum nostri tanto illum odio, doctrina eius minime cognita, persequuntur: quod aliquando clarius innotescet.

In the Paracelsus Dictionary of Gerard Dorn [36] laudanum is not yet described as an opiate:

Laudanum, et non ladanum, est medicina Paracelsi ex auro, corallis, unionibus, etc. composita. Est etiam materia perlata.

Laudanum, est specificum remedium sive medicamentum Paracelsi ad febres.

But then from 1600 on the view was frequently held that the Laudanum of Paracelsus had been an opium remedy. Oswald Croll in his *Basilica Chymica* first published in 1608 gives the following prescription: [37]

[36] Frankfurt, 1584.

[37] In the edition Frankfurt, 1647 (with the notes of J. Hartmann), p. 189 ff.

Laudanum Paracelsi Laudatissimum.

Rec. Opii Thebaici uncias tres.
Succi Hyoscyami debito tempore collecti, et in Sole prius inspissati unciam i. et semis.
Specierum Diambrae et Diamoschi fideliter dispensatorum ana uncias duas cum dimidia.
Mumiae Transmarinae selectae unciam semis.
Salis Perlarum.
Corallorum ana drachm. iii.
Liquoris Succini albi per Alcohol vini extracti.
Ossis de Corde Cervi ana drachmam i.
Lapidis Bezoartici.
Unicornu animalis vel mineralis ana drachmam i.
Mosch.
Ambrae ana scrupulum i.
In defectu genuini auri potabilis nullis corrosivis inquinati addantur
Oleorum Anisi
Carui
Arantiorum
Citriorum
Nucistae
Caryophyllorum
Cinnamomi
Succini ana guttae 12
Fiat ex his secundum artem Chymicam massa seu Extractum, e quo ad necessarios usus possint pilulae efformari.

Croll also gives the prescription of an

Electuarium Laudani.[38]

Rec. Opii.
Succi e Rad. Hyoscyami Essentificatorum ana unciam unam.
Essentiae radicis Mandragorae cum S. v. extractae drachmas sex.
Specierum Diambrae sine Moscho et Ambra praeparat. uncias quatuor.
Salis Perlarum.
Corallorum ana drachmas duas.
Carabe.
Mumiae ana scrupulos quatuor.
Croci Orientalis scrupulos duos.
Unicornu scrupulum unum.
Terrae Strigensis drachmam i.
Mellis despumati uncias duodecim.

[38] *L. c.*, p. 194.

Dissolvatur Essentia Opii et Hyoscymia (si sit nimis liquida, fac ut Spiritus vini prius sufficienter lento calore ab illis evaporet) in melle supra ignem, postquam probe mixta fuerint, adde Salia Perlarum et Corallorum, postea reliquos pulveres tenuissime tritos, Carabe scilicet, Mumiam, Crocum, Unicornu, Terram sigillatam, cum speciebus Diambrae paulatim insperge tepide diligenter miscendo in formam Electuarii.

Johannes Hartmann in his *Praxis Chymiatrica* first published in 1633 has a considerable number of Laudanum recipes:

L. opiatum (p. 46)[89]
L. [opiatum] aliud (p. 47)
De extractione Nepenthes sive l. opiati vera et perfecta descriptio (p. 464)
De alia descriptione laudani, opiati, solis et lunae (p. 468)

None of these is attributed to Paracelsus. It might have been obvious at that time.

L. sine opio (p. 44)
L. antepilepticum (p. 77)
L. ad suffocationes matricis (p. 295)

Hartmann contributes to the Paracelsus legend by attributing to him

L. Mercurii Paracelsi (p. 490)
Theophrasti l. verum (p. 547)
Aliud l. Theophrasti (p. 548)

A careful investigation of the 17th century medical literature would without any doubt produce a great variety of laudanum recipes. I think, however, that for our present purposes these few hints will suffice. They show that *laudanum* became a generic term for praiseworthy remedies, some of which contained opium, some not. They also show that there was no unanimity of opinion as to what the real laudanum Paracelsi actually had been.

With Thomas Sydenham a new period begins. His laudanum became *the* laudanum of the pharmacopoeias where it was kept until very recently.

[89] The pages refer to the edition Geneva, 1635.

Fig. 1.

ROBERT E. SCHLUETER

MICH

TEXTS AND DOCUMENTS

MEDICAL HISTORY COLLECTIONS IN THE UNITED STATES AND CANADA *

V.

THE PARACELSUS COLLECTION OF THE ST. LOUIS MEDICAL SOCIETY

[Robert E. Schlueter Collection]

We are fortunate in having two important collections of the works of Paracelsus in this country. The collection of the late Dr. Constantine Hering is today in the Library of Hahnemann Medical College in Philadelphia, a catalogue of which was published by the College in 1932.

Larger and still more important is the collection that Dr. Robert E. Schlueter assembled in a lifetime of collecting and which he presented to the St. Louis Medical Society in 1939. It is kept today in the beautiful Bartscher Room of the Library of the St. Louis Medical Society.

The present check-list was prepared on the occasion of the 400th anniversary of the death of Paracelsus, in connection with the Paracelsus Exhibit organized by the American Association of the History of Medicine at its seventeenth Annual Meeting in Atlantic City, May 4-6, 1941.

In 1894 Karl Sudhoff published his monumental Bibliographia Paracelsica.[1] This made our task very easy for the first part of the check-list. Since Sudhoff gives full titles and full bibliographic descriptions and discusses every item in great detail, we kept the

* See this *Bulletin*, 1939, Vol. 7, pp. 535-563; 1940, Vol. 8, pp. 1214-1245; 1941, Vol. 9, pp. 332-336.

[1] Karl Sudhoff, Versuch einer Kritik der Echtheit der Paracelsischen Schriften. I. Theil. Die unter Hohenheim's Namen erschienenen Druckschriften. Berlin, 1894: Bibliographia Paracelsica, Besprechung der unter Theophrast von Hohenheim's Namen 1527-1893 erschienenen Druckschriften; II. Theil. Paracelsische Handschriften I. Hälfte. Berlin, 1898: Paracelsus-Handschriften gesammelt und besprochen; II. Hälfte. Berlin, 1899.

Fig. 2. Hugo W. Bartscher Room of the St. Louis Medical Society with the James Moores Ball Library in the foreground and THE PARACELSUS COLLECTION in the far right hand corner.

titles of our first part as short as possible, following the principles of the *Short-Title Catalogue of Books Printed in England, Scotland, and Ireland and of English Books Printed Abroad, 1475-1640*. The number preceding every title is the number of the Sudhoff Bibliography.

In the second part of the check-list the titles have been given more fully.

The list has been edited by Miss Genevieve Miller on the basis of data submitted by Dr. Schlueter and Mrs. Lily Hanvey Alderson. Mr. Morris Leikind, of the Library of Congress, took the trouble to check the list with the Union Catalog and to indicate in what other libraries of the country some of the books can be found. This will undoubtedly increase the usefulness of the list. We, on the other hand, sent page-proofs to the Library of Congress so that the collection may be included in the Union Catalog.

The abbreviations used by the Union Catalog which occur in this check-list are the following:

CtHT	Trinity College, Hartford, Conn.
CtY	Yale University, New Haven, Conn.
DFo	Folger Memorial Library, Washington, D. C.
DLC	Library of Congress, Washington, D. C.
DSG	U. S. Surgeon General's Office, Washington, D. C.
ICJ	The John Crerar Library, Chicago, Ill.
ICN	The Newberry Library, Chicago, Ill.
InU	Indiana University, Bloomington, Ind.
MB	Public Library, Boston, Mass.
MH	Harvard College, Cambridge, Mass.
MH-M	Harvard Medical School, Cambridge, Mass.
MWiW	Williams College, Williamstown, Mass.
MdBW	Wm. H. Welch Medical Library, Baltimore, Md.
MiU	University of Michigan, Ann Arbor, Mich.
MnU	University of Minnesota, Minneapolis, Minn.
NjP	Princeton University, Princeton, N. J.
NN	New York Public Library, New York, N. Y.
NNE	Engineering Societies Library, New York, N. Y.
PHi	Historical Society of Pennsylvania, Philadelphia, Pa.
PU	University of Pennsylvania, Philadelphia, Pa.
ViRA	Richmond Academy of Medicine, Richmond, Va.

HENRY E. SIGERIST

Fig. 3. The Paracelsus Collection.

Mrs. Lily Hanvey Alderson at the right and Mrs. Harriette W. Hagemeyer on the left.

PART I.

BOOKS DESCRIBED IN KARL SUDHOFF'S BIBLIOGRAPHIA PARACELSICA

1. Period 1527-1539: Prints Published During the Lifetime of Paracelsus

7. Von der Frantzösischen kranckheit. Drey Bücher. 4°. *Nurmberg, Friderich Peypus*, 1530.
13. Vonn dem Bad Pfeffers in Oberschwytz gelegen. 4°. [n.p., n.d.] [1535]
20. Der grossenn Wundartzney, das Erst Buch. fol. *Augspurg, Heynrich Steyner*, 1537. [Bound with 21]
21. Der grossen Wundartzney, Das ander Buch. fol. *Augspurg, Heynrich Steyner*, 1537. [Bound with 20]

2. Period 1549-1557: Mostly Reprints, Adaptations and Low German Translations of Works Published by Paracelsus Himself

25. Propheceien und Weissagungen. 4°. [n.p.], 1549.
27. Propheceien und Weissagungen. 4°. [n.p., n.d.]
29. Von der Frantzösischen kranckheit drey Bücher. 4°. *Franckfurt am Mayn, Herman Gülfferich*, 1553.
30. Labyrinthus medicorum errantium. 4°. *Noribergae, apud Valentinum Neuberum, impensis Bernhardi Vischer*, 1553. MdBW.

3. Period 1560-1588: Publication of Posthumous Manuscripts of Paracelsus in Separate Editions of his Disciples

39. Libri quatuor De vita longa. 8°. [*Basel*], 1560.
40. Wundt und Leibartznei, Die gantze Chirurgei belangend. 8°. *Franckfort am Meyn, Chr. Egenolffs Erben*, 1561. [Bound with 66 and 67]
41. Von der Pestilentz. 4°. *Straubing, Hans Burger*, 1561.
42. Liber de duplici anatomia. 8°. [*Basel*, 1561.]
43. De gradibus, de compositionibus et dosibus receptorum ac naturalium libri septem. 4°. *Mylocci, Petrus Fabricius*, 1562.
44. Spittal Buch. 4°. *Mülhausen, Peter Schmid*, 1562. [Bound with 52 and 48] DSG.
45. Baderbüchlin. 4°. *Mülhausen, Peter Schmid*, 1562. MiU.
46. Libri V. de Vita longa. 8°. *Basileae apud Petrum Pernam*, [1562]. DSG. MH.
47. Das Buch Paramirum. 4°. *Mülhausen, Peter Schmid*, 1562.
48. Modus Pharmacandi. 4°. *Cöllen, Jaspar Gennep*, 1562. [Bound with 52 and 44]

Fig. 4. Paracelsus Portrait by Augustin Hirschvogel, 1538.

49. Erster Theil Der grossen Wundartzney. 4°. [*Frankfurt am Mayn, Weygand Han, Georg Rab*, 1562]. [Bound with 50 and 51]
50. Der ander Theil Der grossen Wundtartzney. 4°. *Frankfurt am Mayn, Weygand Han, Georg Rab.* [1562]. [Bound with 49 and 51]
51. Der dritte Theil Der grossen Wundtartzney. 4°. *Frankfurt am Mayn, Weygand Han, Georg Rab*, 1562. [Bound with 49 and 50]
52. Erster Theyl Der grossen Wundartzney. Der ander Theil Der grossen Wundtartzney. Der dritte Theil Der grossen Wundtartzney. 4°. [Partly same sheets as 49-51, partly reprinted.] [Bound with 44 and 48]
53. Drei Bücher Von wunden und schäden, sampt allen iren zufellen, und derselben vollkommener Cur. 4°. *Franckfurt am Meyn, Christian Egenolffs Erben*, 1563.
54. Libri quinque de causis, signis et curationibus morborum ex Tartaro utilissimi. 8°. *Basileae, Petrus Perna*, 1563. [Another copy bound with 97, 98, 101, and Gerhard Dorn, De meteoris liber unus. *Basileae*, [n.d.]]
56. Von ersten dreyen principiis, was ire formen und wirckung. 8°. [n.p., n. d.] [1563, probably Basel.]
57. Von Tartarischen kranckheiten. 8°. [n.p., n.d.] [1563]
62. Opus Chyrurgicum. fol. *Strassburg, Paulus Messerschmidt*, 1564. ICJ.
63. Etliche tractaten vor in Truck nie ausskommen. Vom Podagra und seinen speciebus. 4°. *Cöln, Erben Arnoldi Byrckmanni*, 1564. DSG.
64. Drey Bücher. . . . Das erst Buch, die verantwortung uber etzlich verunglimpfung seiner missgünner. 4°. *Cöln, Erben Arnoldi Byrckmanni*, 1564.
65. Philosophiae ad Athenienses, drey Bücher. 4°. *Cöln, Erben Arnoldi Byrckmanni*, 1564.
66. Das Buch Paragranum. 8°. *Franckfurt am Meyn, Christian Egenolffs Erben*, 1565. [Bound with Rantzovius, Wie die Menschliche Gesundheit . . . , *Basel*, 1637.] [Another copy bound with 67 and 40]
67. Das Buch Paramirum. 8°. *Franckfurt, Christian Egenolffs Erben*, 1565. [Bound with 66 and 40]
68. Drey Bucher. I. Das Holtzbüchlin. II. Von dem Vitriol, und seinen kranckhaiten. III. Ein kleyne Chyrurgy. 8°. *Strassburg, Christian Müller*, 1565. [Bound with 95, 132, 150, 151, 170, 171, 172, 179 and 199 etc.]
69. Opus Chyrurgicum. fol. *Franckfurt am Mayn, durch Martin Lechler, in verlegung Sigmund Feyrabends und Simon Hüters*, 1565. Vi RA.
70. Lib. II. De Causa et Origine Morborum. 4°. *Cöln, Erben Arnoldi Byrckmanni*, 1565.
71. Drei Bücher Von wunden und Schäden. 8°. *Franckfurt, Christian Egenolffs Erben*, 1565.

Durch den Wochge
lerten Herrn Theophraſtum
von Hochenheim/beyder artzney Doctorem/
von der Frantzöſiſchen kranckheit
Drey Bücher. Para.
Das Erſt von der impoſtur
der Artzney/ deren zwenzig ſinde do durch die kran-
cken verderbt ſind worden.
Das Ander vom corrigiren
der ſelbigen/ynn was weyß ſie on verderbung
zu brauchen ſindt.
Das Drit von den verderbtē
kranckheiten/ wie den ſelbigen widerumb zu helffen ſey.
Auch wie andere new vner
hört kranckheiten/ aus jniger vnnd falſcher
Artzney entſpringen.

Fig. 5. Title-page of First Edition of Treatise on Venereal Disease. Published at Nurnberg by Friderich Peypus, 1530. [Sudhoff 7].

73. Das Buch, Meteororum. Item: Liber Quartus Paramiri de Matrice. 4°. *Cöln, Arnoldi Byrckmans Erben,* 1566.
74. Libri Duo. I. Defensiones septem. II. De Tartaro, sive morbis Tartareis. 8°. *Argentorati, Christianus Mylius,* 1566.
76. Spittal Buch. 8°. *Franckfurt am Mayn, Peter Schmid,* 1566. DLC. MdBW.
77. Badenfart Büchlin. 8°. *Franckfurt am Mayn, Peter Schmidt,* 1566. [Bound with 172 and others]
81. Opus Chyrurgicum. fol. *Franckfurt am Mayn, durch Martin Lechler, in verlegung Sigmund Feyrabends und Simon Hüters,* 1566.
82. Lib. II. de Causa et Origine Morborum. 4°. *Cöln, Erben Arnoldi Byrckmanni,* 1566.
84. Gifftiager. 8°. *Franckfurt am Mayn, bey Martin Lechler, in verlegung Sigmund Feyrabends und Simon Hüters,* 1567.
85. Astronomica et Astrologica. 4°. *Cöln, Arnoldi Byrckmans Erben,* 1567. PU.
86. Philosophiae Magnae, Tractatus aliquot. 4°. *Cöln, Arnoldi Byrckmans Erben,* 1567. DSG.
87. Medici Libelli. Physionomia morborum. 4°. *Cöln, Arnoldi Byrckmans Erben,* 1567.
88. Von der Bergsucht oder Bergkranckheiten drey Bücher. 4°. *Dilingen, Sebaldum Mayer,* 1567. DSG. MH.
89. Compendium, Ex optimis quibusque eius libris. 8°. *Parisüs, in ædibus Rovillii,* [n.d.] [1567].
91. Schreyben, von den kranckheyten, so die vernunfft berauben. 4°. [*Basel, Perna*], 1567.
92. Etliche Tractaten, zum ander mal in Truck aussgangen. Vom Podagra und seinen speciebus. 4°. *Cöln, Erben Arnoldi Birckmanni,* 1567. DSG.
95. Declaration, zubereyten Hellebori, inn sein arcanum. 8°. [n. p.], 1568. [*Basel, Apiarius for Perna*] [Bound with 68, 132, 150, 151, 170, 171, 172, 179, 199, etc.]
97. Libellus De Urinarum ac pulsuum iudiciis. 8°. *Argentinae, Typis Samuelis Emmelii,* 1568. [Bound with 54, 98, 101, and Gerhard Dorn, De Meteoris liber unus. *Basilcae,* [n.d.]]
98. Septem Libri de Gradibus, de Compositionibus, de Dosibus receptorum ac Naturalium. 8°. *Basileae, Petrus Perna,* 1568. [Bound with Nos. 97, 101, 54, and Gerhard Dorn, De Meteoris liber unus. *Basilcae* [n.d.]]
99. Compendium, Ex optimis quibusque eius libris. 8°. *Basileae, Petrus Perna,* 1568.
100. Aphorismorum aliquot Hippocratis genuinus sensus et vera interpretatio. 8°. *Augspurg, Mattheus Francke, in verleg Georg Willers,* [n.d.] [1568].

101. Pyrophilia vexationumque liber. 8°. *Basileae, Petrus Perna,* 1568. [Bound with 97, 54, 98, and Gerhard Dorn, De meteoris liber unus. *Basileae* [n.d.]] DSG.
104. Praeparationum, Libri duo. 8°. [n.p., n.d.] [*Strassburg, Bernhard Jobin,* 1569]
105. Preparationum. 8°. [*Strassburg, Bernhard Jobin*], 1569.
106. Ausslegung Der Figuren, so zu Nürenberg gefunden seind worden, gefürt in grundt der Magischen Weisssagung. 8°. [n.p.], 1569.
107. De Praeparationibus Libri duo. 4°. *Cracoviae, Mathias Wirzbieta,* 1569.

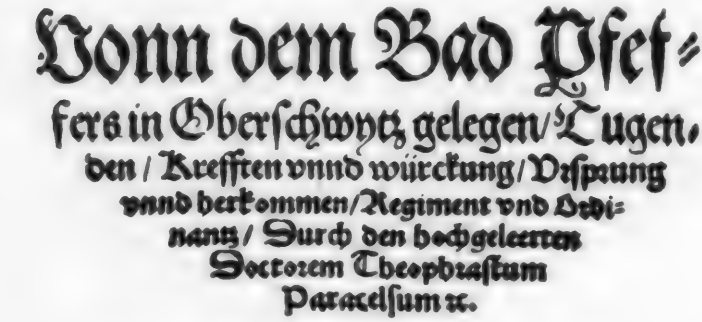
Vonn dem Bad Pfef-
fers in Oberschwytz gelegen/Tugen-
den / Krefften vnnd würckung/Vrsprung
vnnd herkommen/Regiment vnd Ordi-
nantz/ Durch den hochgeleerten
Doctorem Theophrastum
Paracelsum ꝛc.

Fig. 6. Title-page of Treatise on the Bath Resort "Pfeffers." Published 1535. [Sudhoff 13].

108. Archidoxae Libri X. 4°. *Cracoviae, Mathias Wirzbieta,* [1569].
109. Collectanea quaedam. 8°. *Basileae, Petrus Perna,* [n.d.] [1569].
110. De Meteoris liber unus. 8°. *Basileae, Petrus Perna,* [n.d.] [1569]. [Bound with 111]
111. De Praesagiis, Vatiticiniis [!] et Divinationibus. 8°. *Basileae, Petrus Perna,* 1569. [Bound with 110]
112. Chirurgia vulnerum. 8°. *Basileae, Petrus Perna,* [n.d.] [1569]. DSG.
113. Trei Tractat. Der Erst, Von öffnung der Haut. 8°. *Strassburg, Theodosius Rihel,* 1570.
115. Expositio vera harum imaginum olim Nurenbergae repertarum. 8°. [n.p.], 1570.
118. Archidoxa, Von heymligkeyten der Natur, Zehen Bücher. 8°. *Strassburg, Theodosius Rihel,* 1570. DSG. MnU. NNE.
119. Archidoxa ex Theophrastia. 4°. *München, Adam Berg,* 1570. DSG.
120. Ettliche Tractatus. I. Von Natürlichen dingen. 8°. *Strassburg, Christian Müllers Erben,* 1570. [Bound with Alexander von Suchten, Liber Unus de secretis Antimonii. *Strassburg,* 1570]

121. Archidoxorum Theophrastiae Pars Prima. 4°. *Cölln, Arnoldi Birckmans Erben*, 1570.
122. Liber Paramirum. 8°. *Basileae, Petrus Perna*, 1570. [Bound with 126]
123. Archidoxorum libri decem. 8°. *Basileae, Petrus Perna*, 1570. [Bound with 125]
124. Chirurgia minor quam alias Bertheoneam intitulavit. 8°. *Basileae, Petrus Perna*, [n.d.] [1570]. DSG.
125. De summis Naturae Mysteriis Libri tres. 8°. *Basileae, Petrus Perna*, 1570. [Bound with 123]
126. De Tartaro libri septem. 8°. *Basileae, Petrus Perna*, 1570. [Bound with 122, another copy bound with 190]
128. Etliche Tractetlein zur Archidoxa gehörig. 4°. *München, Adam Berg*, 1570. [Bound with 129 and 134] DSG.
129. Archidoxa, zwölff Bücher. 4°. *München, Adam Berg*, 1570. [Bound with 128 and 134]
130. Dreyzehen Bücher Paragraphorum. 4°. *Basel, Peter Perna*, 1571.
131. Astronomia Magna. fol. *Franckfurt am Mayn, Martin Lechler, in verlegung Hieronymi Feyerabends*, 1571.
132. Von dem Bad Pfeffers. 8°. *Strassburg, Christian Müller*, 1571. [Bound with 136, 156 and 179] [Another copy with 68, 95, 150, 151, 170, 171, 172, 179, 199, etc.]
134. De spiritibus planetarum sive metallorum Libri III. 4°. *Basileae, [Peter Perna]*, 1571. [Bound with 128 and 129]
136. Drey herrliche Schrifften: Das erst, vom geist des lebens und seiner krafft. 8°. *Basel, Samuel Apiarius*, 1572. [Bound with 132, 156 and 179]
137. Metamorphosis. 8°. [n.p.], 1572. [*Basel, Samuel Apiarius*]. DLC.
139. De medicamentorum simplicium gradibus et compositionibus, opus novum. 8°. *Tiguri, Froschouerus*, 1572.
140. De Lapide Philosophorum, Drey Tractat. 8°. *Strassburg, Niclauss Wyriot*, 1572.
141. Zwen Tractatus. I. De viribus membrorum spiritualium, II. De Electro. 8°. *Strassburg, Bernhard Jobin*, 1572. DLC.
142. Archidoxorum X. Bücher. 4°. [n.p.], 1572. [*Basel, Petrus Perna*]. MH.
143. Ausslegung Der Figuren, so zu Nürenberg gefunden seind worden. 8°. [n.p.], 1572.
144. Libri duo: prior Theophrasti septem defensiones adversus aemulos suos continet. 8°. *Coloniae Agrippinae, Petrus Horst*, 1573.
145. De natura rerum libri septem. De natura hominis libri duo. 8°. *Basileae, Petrus Perna*, 1573.
146. Chirurgia Magna, Tomus Primus. fol. *Argentorati*, 1573. [*Basel, Peter Perna*]. [Bound with 147 and 148] DSG. Md BW. Vi RA.

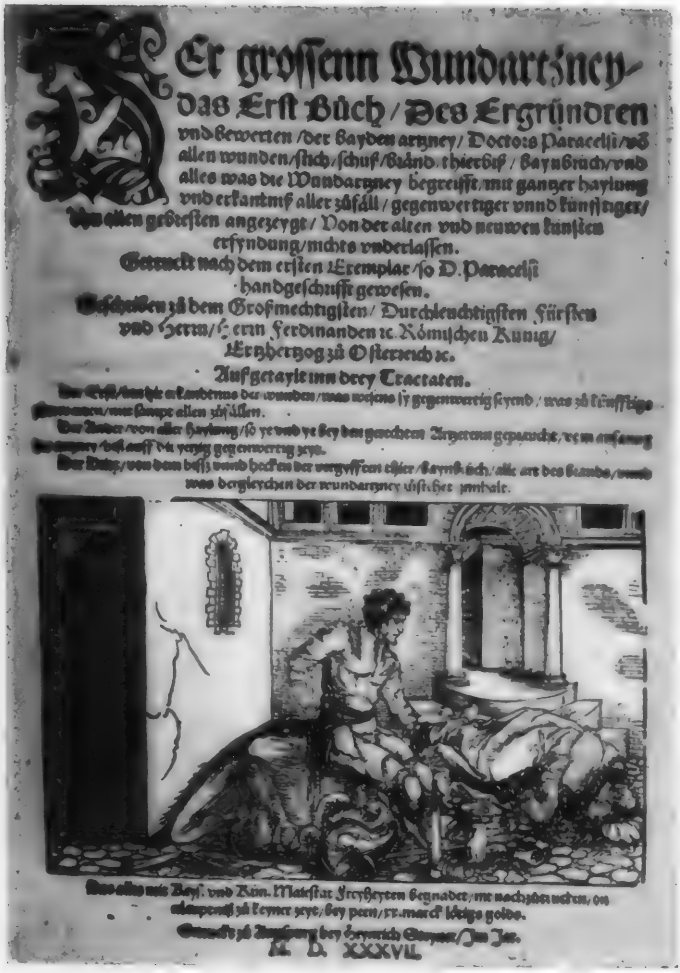
Er grossenn Wundartzney-
das Erst Bůch / Des Ergründten
vnd Bewerten / der Bayden artzney / Doctoris Paracelsi / vñ
allen wunden / stich / schuss / Bränd / thierbiss / Bayn brüch / vnd
alles was die Wundartzney begreifft / mit gantzer haylung
vnd erkantnüss aller zůfäll / gegenwertiger vnnd künfftiger /
den allen gebresten angezeygt / Von der alten vnd neuwen künsten
erfyndung / nichts vnderlassen.
Getruckt nach dem ersten Exemplar / so D. Paracelsi
handgeschrifft gewesen.
Geschrieben zů dem Grossmechtigsten / Durchleuchtigsten Fürsten
vnd Herrn / Herrn Ferdinanden rc. Römischen Kunig /
Ertzhertzog zů Osterreich rc.
Auffgetayltenn drey Tractaten.
Der Erst / von dyt ein Landtermo der wunden / was wesens sy gegenwertig seyend / was zů künfftiger
gefarnuss / vnns stimpe allen zůfallen.
Der Ander / von aller haylung / so ye vnd ye bey den gemelten Artzetten gepraucht / vñ in ansehung
der gegenwertigkeyt auff die yetzig gegenwertig zeyt.
Der Dritt / von dem bysz vnnd hecken der vergyfften thier / Baynbrüch / alle art des Brands / vnnd
was dergleychen der wundartzney vñsicher zůstat.
Dise alle mit Key. vnd Kün. Maiestat Freyheyten begnadet / nit nachzůtrucken, on
ainsprechen zů keyner zeyt / bey peen / xv. marck lötigs golds.
Gedruckt zů Augspurg bey Heynrich Steyner / Im Jar.
M. D. XXXVII.

Fig. 7. Title-page of Grosse Wundarzney, Augsburg, 1537 [Sudhoff 20].

147. Chyrurgiae Magnae Tomus Secundus. fol. [*Basel, Peter Perna*], 1573. [Bound with 146 and 148] Md BW.
148. Chyrurgia Minor, quam alias Bertheoneam intitulavit. fol. [*Basel, Peter Perna*], 1573. [Bound with 146 and 147] DSG. Md BW.
150. Fünff Bücher Vonn dem Langen leben. 8°. *Strasburg, Bernhard Jobin*, 1574. [Bound with 68, 95, 132, 151, 170, 171, 172, 179, 199, etc.]
151. Das sechste Buch in der artznei. Von den Tartarischen oder Stein kranckheiten. 8°. *Basel, Samuel Apiarius in verlegung Petri Pernae*, 1574. [Bound with 68, 95, 132, 150, 170, 171, 172, 179, 199, etc.]
153. Schreiben von tribus Principiis aller Generaten. 8°. *Basel, Samuel Apiarius inn kosten Petri Pernae*, 1574.
154. Onomastica II. 8°. *Argentorati, Bernhardus Jobinus*, 1574.
155. *ἑρμηνεία*. Das ist ein Onomasticum, interpretatio oder erklerunge Leonhardt Thurneyssers zum Thurn. Uber die frembden und unbekanten Wörter . . . Paracelsi. Das erst Teil. 8°. *Berlin im Grawen Kloster*, 1574.
156. Labyrintus und Irrgang der vermeinten Artzet. Item, Siben Defensiones, oder Schirmreden. 8°. *Basel, Samuel Apiarius im kosten und verlag, Herren Petri Pernae*, 1574. [Bound with 132, 136 and 179] DSG.
157. Metamorphosis. 8°. *Basel, Samuel Apiarius, im kosten und verlag, Herren Petri Pernae*, 1574. DLC.
158. Archidoxa, Zehen Bücher. 8°. *Strassburg, Christian Müller*, 1574.
159. Onomasticon. 8°. *Basel, Peter Perna*, 1575.
160. Libri XIIII. Paragraphorum. 8°. *Argentorati, Christianus Mylius*, 1575.
161. De secretis creationis. 8°. *Strassburg, Christian Müller*, 1575. [Bound with 179, 180, 163, etc.]
163. Volumen Medicinae Paramirum. 8°. *Strassburg, Christian Müller*, 1575. [Bound with 161, 179, 180]
164. De secretis antimonii Liber unus Alexandri a Suchten. 8°. *Basileae, Petrus Perna*, 1575. [Containing pp. 83-112 Paracelsi Libri De Narcoticis aegritudinibus.]
165. Operum Latine redditorum. Tomus I. 8°. *Basileae, Petrus Perna*, 1575.
166. Operum Latine redditorum. Tomus II. 8°. *Basileae, Petrus Perna*, 1575.
170. Von Den Kranckheiten, so den Menschen der Vernunfft natürlich berauben, sampt iren Curen. 8°. *Strassburg, Niclauss Wyriot*, 1576. [Bound with 68, 95, 132, 150, 151, 171, 172, 179, 199, etc.]
171. De Peste. 8°. *Strassburg, Niclauss Wyriot*, 1576. [Bound with 68, 95, 132, 150, 151, 170, 172, 179, 199, etc.]
172. Schreiben von warmen oder Wildbädern. 8°. *Basel, Peter Perna*, 1576.

Fig. 8. Title-page of Labyrinthus showing the Portrait of Paracelsus by Augustin Hirschvogel of 1540. Published at Nurnberg by Valentin Neuber. M. D. LIII. [Sudhoff 30].

[Bound with 77 and others] [Another copy bound with 68, 95, 132, 150, 151, 170, 171, 179, 199, etc.]

174. Von den Ofnen schäden und geschweren. 8°. *Strassburg, Christian Müller*, 1577.

175. Drey Tractat. I. De generatione hominis. 8°. *Strassburg, Christian* Müller, 1577. DLC.

176. Von der Wundartzney, vier Bücher. 4°. *Strassburg, Christian Müller*, 1577.

177. Aurora Thesaurusque Philosophorum. 8°. *Basileae*, 1577. MH.

178. Schreiben von den Frantzosen in IX Bücher verfasset. 8°. *Basel, Peter Perna*, 1577.

179. Pharmacandi modus. 8°. *Strassburg, Christian Müller*, 1578. [Bound with 180, 163, 161, etc., another copy bound with 132, 136, 156, another copy bound with 68, 95, 132, 150, 151, 170, 171, 172, 199, etc.]

180. De morbo Gallico. Drey Bücher. 8°. *Strassburg, Christian Müller*, 1578. [Bound with 163, 179, 161, etc.] DSG.

181. De restituta utriusque Medicinae vera Praxi. Liber Primus. 8°. *Lugduni, Iacobus du Puys*, 1578.

185. Fasciculus Paracelsicae medicinae veteris et non novae. 4°. *Francoforti ad Moenum, Ioannes Spies Impensis Sigismundi Feyerabendt*, 1581.

186. Congeries Paracelsicae chemiae de transmutationibus metallorum. 8°. *Francofurti, Andreas Wechelus*, 1581. ICJ.

190. Centum quindecim curationes experimentaque. 8°. [*Lyon*], *Iohannes Lertout*, 1582. [Bound with 126] MH.

191. Archidoxorum, Seu de Secretis Naturae mysteriis, libri decem. 8°. *Basileae, Petrus Perna*, 1582. ICJ.

192. Etliche Tractat. I. Von Natürlichen dingen. 8°. *Strassburg, Christian Müller's Erben*, 1582. MH.

194. מְלִיצָה: Kai 'Epmhneia Das ist ein Onomasticum und Interpretatio oder aussführliche Erklerung, Leonharten Thurneyssers zum Thurn, . . . Uber etliche . . . Nomina . . .Paracelsi. fol. *Berlin, Nicolaus Voltze*, 1583. [Bound with ΜΕΓΑΛΗ ΧΥΜΙΑ. *Berlin, Nicolaus Voltze*, 1583.]

196. Libri V. De vita longa, brevi, et sana. Deq. Triplici corpore. 8°. *Francoforti, Christoff Rab*, 1583.

197. In Auroram Philosophorum, Thesaurum, et Mineralem Oeconomiam, Commentaria. 8°. *Francoforti*, [*Christoph Rab*], 1583.

198. Dictionarium Theophrasti Paracelsi. 8°. *Francoforti, Christoph Rab*, 1583.

199. De Natura Rerum, IX Bücher. 8°. *Strassburg, Bernhart Jobin*, 1584. [Bound with 68, 95, 132, 150, 151, 170, 171, 172, 179, etc.]

200. Commentaria in Archidoxorum Libros X. 8°. *Francoforti*, [*Christoph Rab*], 1584. NjP.

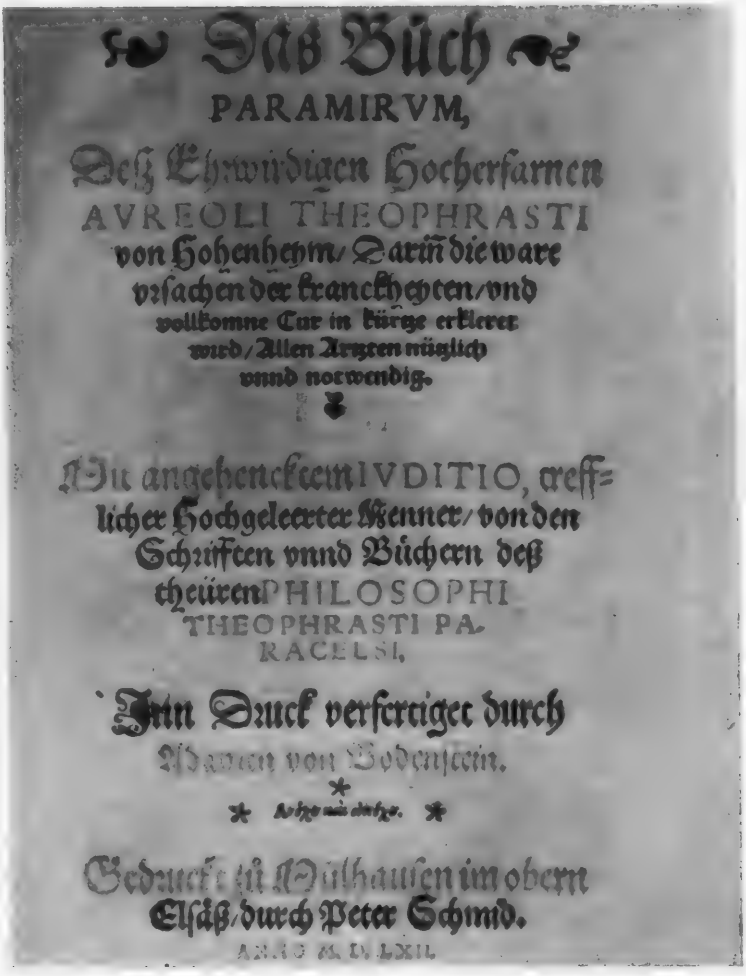
Das Büch
PARAMIRVM,
Deß Ehrwirdigen Hocherfarnen
AVREOLI THEOPHRASTI
von Hohenhelm/ Darin die ware
vrsachen der kranckheyten/vnd
vollkomne Cur in kürtze erkleret
wird/ Allen Artzten nützlich
vnnd notwendig.
Mit angehenckem IVDITIO, treffli-
cher Hochgeleerter Kenner/ von den
Schrifften vnnd Büchern deß
theüren PHILOSOPHI
THEOPHRASTI PA-
RACELSI,
Jnn Druck verfertiget durch
Adamen von Bodenstein.
Gedruckt zů Mülhausen im obern
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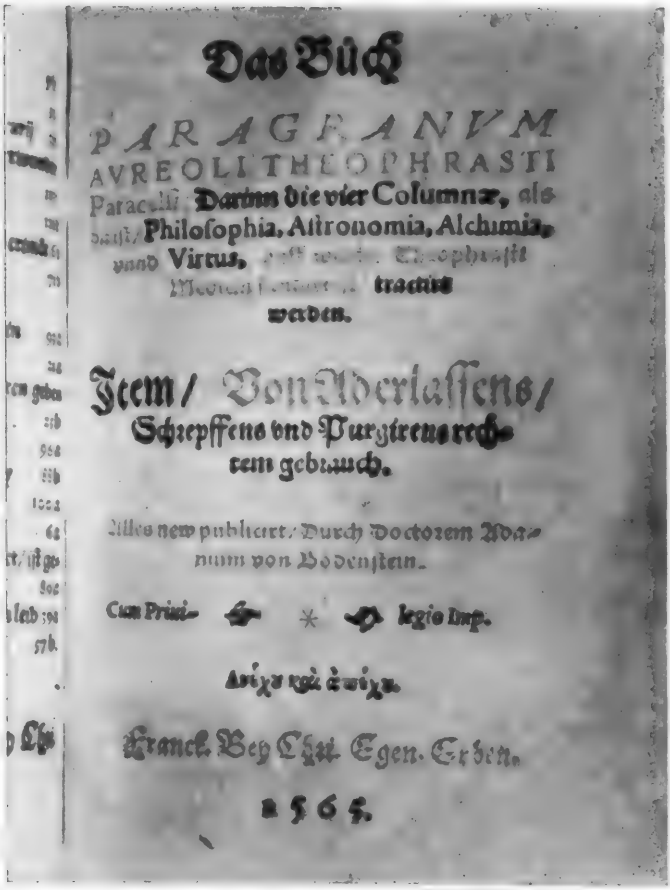
Fig. 9. Title-page of Buch Paramirum, Mühlhausen, 1562 [Sudhoff 47].

201. De summis Naturae mysteriis Commentarii tres. 8°. *Basileae, Ex officina Pernaea per Conr. Waldkirch*, 1584. MH.
202. In Auroram Philosophorum, Thesaurum, et Mineralem Oeconomiam, Commentaria. 8°. *Francoforti*, [*Christoph Rab*], 1584.
203. Dictionarium Theophrasti Paracelsi. 8°. *Francoforti, Christoph Rab*, 1584.
204. Metamorphosis. 8°. [*Basel, Perna-Waldkirch*], 1584.
205. Cyclopaedia Paracelsica Christiana. 4°. [n.p.], 1585.
206. Cheirurgia. Der Erste Theil. fol. *Basel, Conradus Waldkirch*, 1585. [Bound with 207] DSG.
207. Cheirurgia. Der Ander Theil. fol. *Basel, Conradus Waldkirch*, 1585. [Bound with 206] DSG.
209. Wunder Artzney Unnd Verborgine Geheimnisse Allergeheimnissen, etc. in III, Bücher verfasset. 8°. *Basel, Sebastian Henricpetri*, 1586.

4. Period 1589-1658: Publication of the Collected Works of Paracelsus and of Additional Texts

216. Erster Theil Der Bücher und Schrifften. Durch Johannem Huserum. 4°. *Basel, Conrad Waldkirch*, 1589. [Bound with 217] NN.
217. Ander Theil Der Bücher und Schrifften. 4°. *Basel, Conrad Waldkirch*, 1589. [Bound with 216] NN.
218. Dritter Theil der Bücher und Schrifften. 4°. *Basel, Conrad Waldkirch*, 1589. [Bound with 219]
219. Vierdter Theil Der Bücher und Schrifften. 4°. *Basel, Conrad Waldkirch*, 1589. [Bound with 218]
220. Fünffter Theil Der Bücher und Schrifften. 4°. *Basel, Conrad Waldkirch*, 1589. [Bound with 220a] NN.
220a. Appendix Dess Fünfften Theils Operum Theophrasti. 4°. [*Basel, Conrad Waldkirch*, 1589.] [Bound with 220]
221. Sechster Theil Der Bücher und Schrifften. 4°. *Basel, Conrad Waldkirch*, 1590. [Bound with 222]
222. Siebender Theil Der Bücher und Schrifften. 4°. *Basel, Conrad Waldkirch*, 1590. [Bound with 221]
223. Achter Theil Der Bücher und Schrifften. 4°. *Basel, Conrad Waldkirch*, 1590. [Bound with 224]
224. Neundter Theil Der Bücher und Schrifften. 4°. *Basel, Conrad Waldkirch*, 1590. [Bound with 223]
225. Zehender Theil Der Bücher und Schrifften. 4°. *Basel, Conrad Waldkirch*, 1590. [Bound with 225a]
225a. Appendix Dess Zehenden Theils der Schrifften. 4°. [*Basel, Conrad Waldkirch*, 1590]. [Bound with 225]
231. Chirurgischer Bücher unnd Schrifften Erster Theil. Durch Johannem Huserum. 4°. *Basel, Conrad Waldkirch*, 1591. DSG.



Das Buch

PARAGRANVM
AVREOLI THEOPHRASTI
Paracelsi/ Darinn die vier Columnæ, als
Philosophia, Astronomia, Alchimia,
vnnd Virtus,
tractirt
werden.

Item/ Von Aderlassens/
Schrepffens vnd Purgirens rechtem gebrauch.

Alles new publicirt/ Durch Doctorem Adamum von Bodenstein.

Cum Privilegio Imp.

Ἀνίχνευτα ἀνίχνευτα.

Franckf. Bey Chr. Egen. Erben.

1565.

Fig. 10. Title-page of Buch Paragranum, Frankfurt a. M., 1565 [Sudhoff 66].

232. La Grand Chirurgie. Traduite en Francois. Par M. Claude Dariot. 4°. *Lyon, Antoine de Harsy,* [1593].

237. Kunstkammer. Durch Andreas Jessner von Wittenberg. 8°. *Franckfurt an der Oder, Nicolaus Voltze, in vorlegung Nickel Nerlichs,* 1595.

239. A hundred and foureteene Experiments and Cures. 4°. *London, Vallentine Sims,* 1596. DFo. DSG. MWiW.

241. Etliche Tractat. I. Von Natürlichen dingen. 8°. *Strassburg, Antonius Bertram,* 1597.

243. Theophrastisch Vade Mecum. 4°. *Magdeburgk, Johan Francke,* 1597.

244. Aureum Vellus Oder Guldin Schatz und Kunstkammer. 4°. *Rorschach am Bodensee,* 1598.

247. Aureum Vellus. Oder Güldin Schatz und Kunstkammer. 8°. [n.p., n.d.] [1599/1600]

249. Iohan. Wolfii I. C. Lectionum Memorabilium et Reconditarum Centenarii XVI. fol. *Lavingae, Leonhardus Rheinmichel,* 1600.

250. Iohan. Wolfii I. C. Lectionum Memorabilium et Reconditarum Tomus Secundus. fol. *Lavingae, Leonhardus Rheinmichel,* 1600.

251. Theatrum Chemicum. Volumen Primum. 8°. *Ursellis, ex Officina Cornelii Sutorii, sumptibus Lazari Zetzneri,* 1602.

252. Theatrum Chemicum. Volumen Tertium. 8°. *Ursellis, ex Officina Cornelii Sutorii,* 1602.

253. La Grand Chirurgie. Traduite en Francois. Par M. Claude Dariot. Seconde Edition. 4°. *Lyon, Antoine de Harsy,* 1603.

256. Opera Bücher und Schrifften. Durch Johannem Huserum. fol. *Strassburg, Lazarus Zetzner,* 1603. [Bound with 257] ICJ.

257. Opera Bücher und Schrifften. Ander Theyl. fol. *Strassburg, Lazarus Zetzner,* 1603. [Bound with 256]

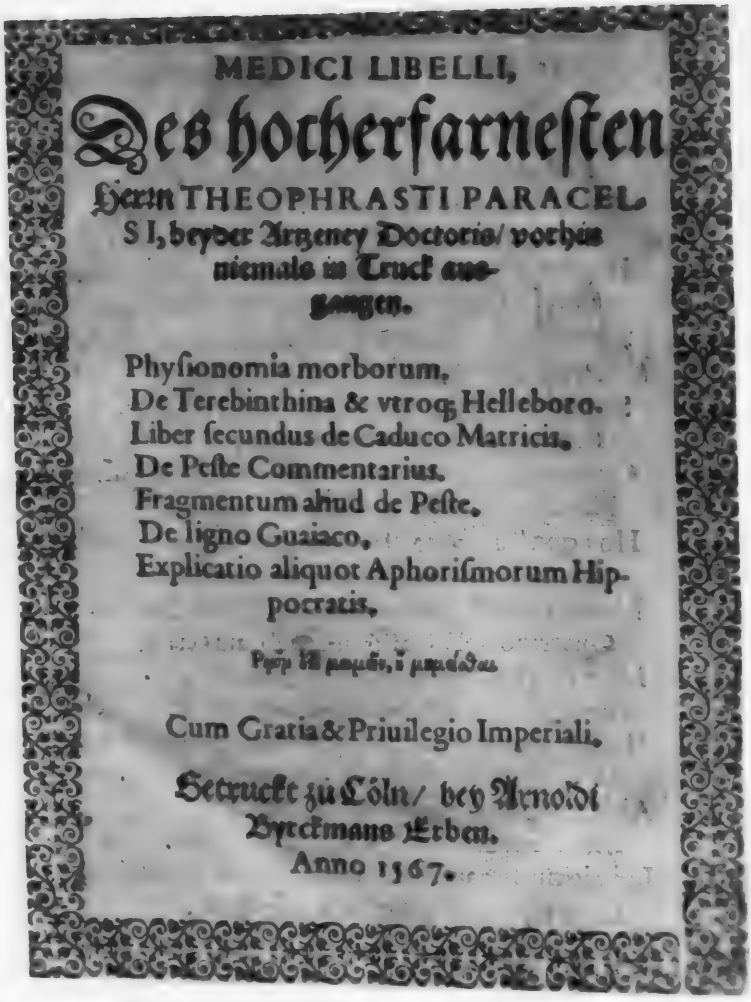
258. Bertheonea sive Chirurgia Minor. 4°. *Franckfort am Meyn,* [*Joh. Wechels Erben*], 1603. [Bound in 3 vols. with 259-263, 269-274] DSG.

259. Operum Medico-Chimicorum sive Paradoxorum, Tomus Genuinus Primus. 4°. *Franckfort am Meyn,* [*Joh. Wechels Erben*], 1603. [Bound in 3 vols. with 258, 260-263, 269-274, also in paper alone] MH-M.

260. Paradoxorum, Tomus Genuinus Secundus. 4°. *Franckfort am Meyn,* [*Joh. Wechels Erben*], 1603. [Bound in 3 vols. with 258, 259, 261-263, 269-274]

261. Operum Medico-Chimicorum. Tomus Tertius Genuinus. 4°. *Franckfort am Meyn,* [*Joh. Wechels Erben*], 1603. [Bound in 3 vols. with 258-260, 262, 263, 269-274]

262. Operum Medico-Chimicorum. Tomus Genuinus Quartus. 4°. *Franckfort am Meyn,* [*Joh. Wechels Erben*], 1603. [Bound in 3 vols. with 258-261, 263, 269-274]


MEDICI LIBELLI,

Des hocherfarnesten

Herrn THEOPHRASTI PARACEL-

SI, beyder Artzeney Doctoris/ vorhin

niemals in Truck ausgangen.

Physionomia morborum.
De Terebinthina & vtroq; Helleboro.
Liber secundus de Caduco Matricis.
De Peste Commentarius.
Fragmentum aliud de Peste.
De ligno Guaiaco.
Explicatio aliquot Aphorismorum Hippocratis.

Cum Gratia & Priuilegio Imperiali.

Getruckt zu Cöln/ bey Arnoldi Byreckmans Erben.

Anno 1567.

Fig. 11. Medici Libelli, Cologne, 1567 [Sudhoff 87].

263. Operum. Tomus Genuinus Quintus. 4°. *Franckfort am Meyn, [Joh. Wechels Erben]*, 1603. [Bound in 3 vols. with 258-262, 269-274]

265. Alchimia Vera, 8°. [n.p.], 1604.

267. Chirurgische Bücher und Schrifften. Durch Johannem Huserum. fol. *Strassburg, Latzarus Zetzner*, 1605. DSG.

269. Operum Medico-Chimicorum Tomus Genuinus Sextus. *Franckfort am Meyn, Joh. Wechels Erben*, 1605. [Bound in 3 vols. with 258-263, 270-274] MH-M.

270. Operum Tomus Genuinus Septimus. 4°. *Franckfort am Meyn, Joh. Wechels Erben*, 1605. [Bound in 3 vols. with 258-263, 269, 271-274]

271. Operum Tomus Genuinus Octavus. 4°. *Franckfort am Meyn, Joh. Wechels Erben*, 1605. [Bound in 3 vols. with 258-263, 269, 270, 272-274]

272. Operum Tomus Genuinus Nonus. 4°. *Franckfort am Meyn, Joh. Wechels Erben*, 1605. [Bound in 3 vols. with 258-263, 269-271, 273, 274]

273. Operum Tomus Genuinus Decimus. 4°. *Franckfort am Meyn, Joh. Wechels Erben*, 1605. [Bound in 3 vols. with 258-263, 269-272, 274]

274. Operum Tomus Genuinus Undecimus. 4°. *Franckfort am Meyn, Joh. Wechels Erben*, 1605. [Bound in 3 vols. with 258-263, 269-273]

278. Theophrastisch Vade Mecum. 4°. *Magdeburg, Johan Francke*, 1607.

279. La Grand Chirurgie. . . . Traduite en François. Par M. Claude Dariot. 3. Ed. 8°. *Monbeliart, Iaques Foillet*, 1608. DSG.

286. De igne magorum philosophorumque secreto externo et visibili. 8°. *Strassburg, Lazarus Zetzner*, 1608.

291. Lexicon alchemiae sive dictionarium alchemisticum. Auctore Martino Rulando. 4°. *Francofurti, Zacharias Palthenius*, 1612.

293. De peste Tractatus. 4°. *Oppenheim. Hieronymus Galler, in Verlegung Johan-Theodor de Bry*, 1613.

294. Solis e puteo emergentis: sive dissertationis chymiotechnicae libri tres. Authore Ioanne Rhenano. Liber primus. 4°. *Francofurti, Antonius Hummius*, 1613. [Another copy bound with 107 and 108]

297. Fasciculus. Oft Lust-Hof der Chimischer Medecijnen. Door M. Laurens Gysbertsz. 8°. *Utrecht, Ian Amelissz*, 1614.

300. Opera Bücher und Schrifften. Durch Joannem Huserum. fol. *Strassburg, Lazari Zetzners Erben*, 1616. DSG. DLC.

301. Opera Bücher unnd Schrifften. Ander Theyl. fol. *Strassburg, Lazari Zetzners Erben*, 1616.

302. Chirurgische Bücher und Schrifften. Durch Johannem Huserum. fol. *Strassburg, Lazari Zetzners Erben*, 1618. DSG.

309. Kurtze und eygentliche Beschreibung, Von Ursprung, Natur, Qualitet und Würckung, dess Weitberümbten, Heylsamen, und Warmen Bads Pfeffers in Obern Schweytz. 4°. *Embs, Bartholome Schnell*, 1619.

314. Reformir-Spiegel des weltlichen Bapsts, und wahren Antichrist zu Rom Durch Ioannem de Hyperiis. 4°. [n.p.], 1620.
315. Das Krancke Römische Reich Dessen Ursach, und glaubwürdige Artzney dargegen. Durch M. Angelum de Grauen. 4°. [n.p.], 1620.
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370. Three exact pieces of Leonard Phioravant. Whereunto is annexed Paracelsus his One hundred and fourteen experiments. 4°. *London, G. Dawson for William Nealand,* 1652.
371. Lexicon Chymicum. . . . per Guliemum Johnsonum. 8°. *London, G. D. for William Nealand,* 1652.
373. Medicina Diastatica or Sympatheticall Mumie. Ed. Andrea Tentzelius.

Trans. Ferdinand Parkhurst. 8°. *London, T. Newcomb for T. Heath,* 1653. MB.

374. Operis Mineralis Dritter Theil. Durch Joan-Rudolphum Glauberum. 8°. *Franckfurt am Mayn, Matthaei Meriani Erben,* 1655.

378. Philosophy Reformed and Improved in Four Profound Tractates. The other III. Discovering the Wonderfull Mysteries of the Creation, by Paracelsus: Being His Philosophy to the Athenians. Trans. H. Pinnel. 8°. *London, M. S. for Lodowick Lloyd,* 1657.

379. Of The Chymical Transmutation, Genealogy and Generation of Metals and Minerals. Trans. R. Turner. 8°. *London, Rich. Moon and Hen. Fletcher,* 1657. MB. MH. PHi.

380. Lexicon Chymicum. Per Gulielmum Johnsonum. 8°. *London, G. D. for William Nealand,* 1657.

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383. Operum volumen tertium, chirurgica opera complectens. fol. *Genevae, Ioan. Antonius and Samuel De Tournes,* 1658. [Bound with 381 and 382] MdBW.

384. Johannis Rudolphi Glauberi Opera Chymica. 4°. *Franckfurt am Mäyn, Thomae-Matthiae Götzens,* 1658.

5. Period 1659-1893: Mostly Worthless Reprints and Texts Wrongly Attributed to Paracelsus

387. Operis mineralis pars tertia, A Johanne Rudolpho Glaubero. 8°. *Amstelodami, Joannes Janssonius,* 1659. MnU.

388. L' oeuvre minérale où est enseigné la séparation de l'or, la naissance et origine de tous les métaux et un comment sur le ciel des Philosophes de Paracelse. 3 parties. Trad. par Du Teil. 8°. *Paris, Jolly,* 1659.

389. Paracelsus his Aurora, and Treasure of the Philosophers. 12°. *London, J. H. Oxon, for Giles Calvert,* 1659.

391. Lexicon chymicum. Per Gulielmum Johnsonum. 8°. *London, G. D. for William Nealand,* 1660.

392. Paracelsus his Archidoxis: Comprised in ten books. Ed. J. H. Oxon. 8°. *London, W. S. to be sold by Thomas Brewster,* 1660. MH.

394. Martini Rulandi, . . . Lexicon alchemiae sive dictionarium alchemisticum. 4°. *Francofurti, apud Johannem Andream and Wolfangi Endteri Junioris haeredes,* 1661. DLC.

314. Reformir-Spiegel des weltlichen Bapsts, und wahren Antichrist zu Rom. Durch Ioannem de Hyperiis. 4°. [n.p.], 1620.
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369. Operis mineralis pars tertia. A Joanne Rudolpho Glaubero. 8°. *Amstelodami, Joannes Janssonius,* 1652.
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381. Opera omnia medico—chemico—chirurgica, tribus voluminibus comprehensa. Volumen primum, Opera Medica complectens. fol. *Genevae, Ioan. Antonius and Samuel De Tournes,* 1658. [Bound with 382 and 383] InU. MdBW.

382. Operum volumen secundum opera chemica et philosophica Complectens. fol. *Genevae, Ioan. Antonius and Samuel De Tournes,* 1658. [Bound with 381 and 383] MdBW.

383. Operum volumen tertium, chirurgica opera complectens. fol. *Genevae, Ioan. Antonius and Samuel De Tournes,* 1658. [Bound with 381 and 382] MdBW.

384. Johannis Rudolphi Glauberi Opera Chymica. 4°. *Franckfurt am Mäyn, Thomae-Matthiae Götzens,* 1658.

5. Period 1659-1893: Mostly Worthless Reprints and Texts Wrongly Attributed to Paracelsus

387. Operis mineralis pars tertia, A Johanne Rudolpho Glaubero. 8°. *Amstelodami, Joannes Janssonius,* 1659. MnU.

388. L' oeuvre minérale où est enseigné la séparation de l'or, la naissance et origine de tous les métaux et un comment sur le ciel des Philosophes de Paracelse. 3 parties. Trad. par Du Teil. 8°. *Paris, Jolly,* 1659.

389. Paracelsus his Aurora, and Treasure of the Philosophers. 12°. *London, J. H. Oxon, for Giles Calvert,* 1659.

391. Lexicon chymicum. Per Gulielmum Johnsonum. 8°. *London, G. D. for William Nealand,* 1660.

392. Paracelsus his Archidoxis: Comprised in ten books. Ed. J. H. Oxon. 8°. *London, W. S. to be sold by Thomas Brewster,* 1660. MH.

394. Martini Rulandi, . . . Lexicon alchemiae sive dictionarium alchemisticum. 4°. *Francofurti, apud Johannem Andream and Wolfangi Endteri Junioris haeredes,* 1661. DLC.

397. Theatro d'Arcani Del Medico Lodovico Locatelli Da Bergamo; Con gli Afforismi d'Ippocrate Commentati da Paracelso. 8°. *Venetia, Paolo Baglioni,* 1667.

402. Astronomia Inferior, Oder: Septem Planetarum Terrestrium Spagyrica Recensio. . . . Durch Marcum Friederich Rosencreutzer, . . . 8°. *Nürnberg, Christoph Endter,* 1674.

403. A New Light of Alchymy: . . . Also Nine Books Of the Nature of Things, Written by Paracelsus, . . . Trans. J. F. 8°. *London, A. Clark for Tho. Williams,* 1674.

405. Magnalia medico-chymica, . . . publiciret von Johanne Hiskia Cardilucio. 8°. *Nürnberg, Wolffgang Moritz Endter und Johann Andreae Endters Erben,* 1676. [Bound with another work by Cardilucius on Philosopher's stone, 1680.] MH.

409. Guliel. Johnsoni, Chym. Lexicon Chymicum. . . . 8°. *Francofurti et Lipsiae, Joh. Henr. Ellingerus,* 1678.

410. Mercurii Zweyfacher Schlangen-stab. I. Glücks-Ruthe zu Paracelsi Chymischem Schatz. 12°. *Ulm, In Verlegung Balthasar Kühnen Seel. Wittib.,* 1679.

411. Alexandri von Suchten, Chymische Schrifften Alle. 8°. *Franckfurt am Mayn, In Verlegung Georg Wolffs, Druckts Johann Görlin,* 1680. DLC. DSG.

416. Thesaurinella Olympica Aurea Tripartita. Durch Benedictum Figulum Uthenhoviatem. 8°. *Franckfurt am Mayn, In Verlegung Georgii Wolffii, Gedruckt durch Johann Görlin.* 1682.

418. Kleine Hand- und Denck-Bibel. 12°. *Franckfurt und Leipzig, Andreas Luppius,* 1684.

419. Gröstes und höchstes Geheimnüss aller seiner Geheimnüsse. 12°. [n.p.], 1686. [Bound with Admonitoria Disceptatio by Ludovico de Comitibus]

421. Matthäi Erbinäi von Brandau, . . . XII. Grund-Säulen der Natur und Kunst, worauf die Verwandelung der Metallen gebauet, benebst V. Vornehmer Artisten wahrhafften Processen, worunter einer des Th. Paracelsi, welcher noch niemahlen in Druck gesehen worden. 8°. [n.p.], 1689.

422. The Works of the Highly Experienced and Famous Chymist, John Rudolph Glauber: . . . Trans. Christopher Packe. fol. *London, Thomas Milbourn,* 1689. DLC. DSG. ICJ. MdBW. NNE.

431. Operis mineralis Erster Theil. Durch Joan. Rudolph. Glauber. 8°. *Prag, Caspar Wussin,* 1705.

432. Aureum Vellus Oder Guldin Schatz und Kunst-Kammer. 4°. *Hamburg, Christian Liebezeit,* 1708.

435. Glauberus Concentratus, Oder Kern der Glauberischen Schrifften. 4°. *Leipzig und Bresslau, Michael Hubert,* 1715.

438. Neu-eröffnete Kunst-Kammer, Oder Theophrastiche Geheimnüsse. Ed. P. Gertz. 8°. *Constantinopel,* 1720.

439. Abregé de la Doctrine de Paracelse, et de ses Archidoxes. 8°. *Paris, Chez D'Houry fils,* 1724.
442. Kleine Hand und Denck-Bibel. 8°. *Mühlhausen, Christoph Fridericus,* 1736.
443. Geheimes und vollständiges Wünsch-Hütlein. Durch Sincerum Aletophilum. 8°. *Erfurt, Aug. Crusius,* 1738.
446. Gottfried Arnolds unpartheyische Kirchen- und Ketzer-Historien. fol. *Schaffhausen, Emanuel und Benedict Hurter,* 1740.
458. Europäischer Staats-Wahrsager. 8°. *Bremen, In der Saurmannischen Buchhandlung,* 1758.
461. Geheimnüss aller seiner Geheimnüsse. 4°. *Franckfurt und Leipzig, Johann Georg Fleischer,* 1770.
462. Der Hermetische Nord-Stern. Heraus gegeben von J. J. F. . . . und sechs Tractätlein Theophrasti Bombast ab Hochenheim. 8°. *Frankfurt und Leipzig, im Krausischen Buchladen,* 1771.
463. Chymischer Psalter, oder Philosophische Grundsätze vom Stein der Weisen Anno 1522. 8°. *Amsterdam,* 1771.
464. Chymischer Psalter, oder Philosophische Grundsätze vom Stein derer Weisen Anno 1522. 8°. *Berlin, Johann Friedrich Vieweg,* 1771. DLC.
465. Natürliches Zauber-Magazin. 8°. *Frankfurt und Leipzig,* 1771.
466. La Fausseté Des Miracles Des Deux Testamens. Ouvrage traduit du manuscrit Latin intitulé: Theophrastus redivivus. 12°. *Londres,* 1775.
469. Aurora Philosophorum. Die Morgenröthe der Weisen, von Gerhard Dornäus. 8°. *Köln am Rhein, in der J. A. Imhofischen Buchhandlung,* 1783.
473. Chymischer Psalter, oder Philosophische Grundsätze vom Stein derer Weisen Anno 1522. 8°. *Berlin, Friedrich Maurer,* 1791.
498. Paracelsus-Forschungen von Eduard Schubert und Karl Sudhoff. Zweites Heft. Handschriftliche Documente zur Lebensgeschichte Theophrasts von Hohenheim. 8°. *Frankfurt a. M., Verlag von Reitz & Koehler,* 1889. DSG. ICJ.

6. Undated Editions

502. Erster Theyl Der grossen Wundartzeney. . . . 4°. *Franckfurt am Mayn, Georg Rab und Weygand Hanen Erben,* [n.d.] [1563?]
503. Libri V. de Vita longa, incognitarum rerum, et hucusque a nemine tractatarum referitissimi, [*sic*!] Comm. Valentius de Retijs et Adamus a Bodenstein. 8°. *Basileae, Petrus Perna* [n.d.] [1566?]
504. Prognosticatio. 4°. [n.p., n.d.] [1560-1580?]
510. I. C. von Vanderbeeg, . . . Manuductio Hermetico-Philosophica. 4°. *Hof, Gotthard Johann Püttner,* [n.d.] [1739?]

PART II.

BOOKS NOT INCLUDED IN KARL SUDHOFF'S BIBLIOGRAPHIA PARACELSICA

1. Editions and Translations of the Works of Paracelsus

Achelis, Joh. Daniel: Paracelsus Volumen Paramirum (Von Krankheit und gesundem Leben), *Verlegt bei Eugen Diederichs in Jena*, 1928, 8°, 170 pp.

Aschner, Bernhard: Paracelsus Sämtliche Werke, nach der 10 bändigen Huserschen Gesamtausgabe (1589-1591) zum erstenmal in Neuzeitliches Deutsch übersetzt—Mit Einleitung, Biographie, Literaturangaben und erklärenden Anmerkungen versehen, 4 Vols. *Jena, Verlag von Gustav Fischer*, 1926, 1928, 1930, 1932, 8°.

Chuzeville, Jean and Baissette, Gaston: Paracelse, La Prognostication. Traduite . . . sur le text de l'edition de 1549 orne de 38 illustrations. *Paris, Hippocrate*, 1933, pp. 8-43.

de Givry, Grillot: Oeuvres Complètes de P-A-Th-B-de Hohenheim dit Paracelse. 2 Vols. *Paris, Bibliothèque Chacornac*, 1913, 1914, 8°.

Kayser, Hans: Schriften Theophrasts von Hohenheim genannt Paracelsus. *Leipzig, Im Insel-Verlag*, 1921, 8°, 558 pp.

Paracelsus: Vom Holz Guajaco grünlicher Heilung, Gedrükt zu Nurmberg durch Friderichen Peypus MDXXIX. This is a facsimile copy printed circa 1926, *Otto Wilhelm Barth-Verlag G. m. b. H. München-Planegg*, small 8°, 1 portrait and 9 plates all in wood-cuts, [n.p.]

Strunz, Franz: Das Buch Paramirum . . . Inn Druck verfertiget durch Adamen von Bodenstein, Gedruckt zu Mülhausen im obern Elsass durch Peter Schmid Anno MDLXII. *Fac Simile Edition* verlegt bei *Eugen Diederichs in Jena*, 1904, 8°, 402 pp.

Sudhoff, Karl: Theophrast von Hohenheim gen. Paracelsus Sämtliche Werke: *1. Abteilung*, Medizinische naturwissenschaftliche und philosophische Schriften, *1. Band*, Früheste Schriften ums Jahr 1520 verfasst. *Druck und Verlag von R. Oldenbourg, München und Berlin*, 1928, 8°, 417 pp.

———: Theophrast von Hohenheim gen. Paracelsus Sämtliche Werke: *1. Abteilung*, Medizinische naturwissenschaftliche und philosophische Schriften, *2. Band*, Frühe Schriften zur Heilmittellehre . . . Geschrieben 1525 u. '26 im südwestlichen Deutschland. *Druck und Verlag von R. Oldenbourg, München und Berlin*, 1930, 8°, 539 pp.

———: Theophrast von Hohenheim gen. Paracelsus Sämtliche Werke: *1. Abteilung*, Medizinische naturwissenschaftliche und philosophische Schriften, *3. Band*, Drei Principien, Spiritus vitae . . . aus den Jahren 1526 und Anfang 1527. *Druck und Verlag von R. Oldenbourg, München und Berlin*, 1930, 8°, 570 pp.

SUDHOFF, KARL: Theophrast von Hohenheim gen. Paracelsus Sämtliche Werke: *1. Abteilung,* Medizinische naturwissenschaftliche und philosophische Schriften, *4. Band,* Vorlesungen des Sommers 1527 zu Basel . . . mit 1 Titelbild und 15 Abbildungen. *Druck und Verlag von R. Oldenbourg, München und Berlin,* 1931, 8°, 676 pp.

———: Theophrast von Hohenheim gen. Paracelsus Sämtliche Werke: *1. Abteilung,* Medizinische naturwissenschaftliche und philosophische Schriften, *5. Band,* Baseler Wintervorlesungen 1527/28 . . . Entwürfe zu einer polemisch gehaltenen Chirurgie, mit 9 Abbildungen, *Druck und Verlag von R. Oldenbourg, München und Berlin,* 1931, 8°, 551 pp.

——— and MATTHIESSEN, WILHELM: Theophrast von Hohenheim gen. Paracelsus Sämtliche Werke: *1. Abteilung,* Die medizinischen, naturwissenschaftlichen und naturphilosophischen Schriften, *Sechster Band,* Aus dem Jahre 1528 (Kolmar in Elsass) mit Titelbild und 5 Tafeln. *Otto Wilhelm Barth, München,* 1922, 8°, 498 pp.

——— and MATTHIESSEN, WILHELM: Theophrast von Hohenheim gen. Paracelsus Sämtliche Schriften: *I Abteilung,* Die medizinischen, naturwissenschaftlichen und naturphilosophischen Schriften, *Siebenter Band,* Die Nürnberger Syphilisschriften und anderes Nürnberger Schriftwerk aus dem Jahre 1529. *Otto Wilhelm Barth, München,* 1923, 8°, 551 pp.

———: Theophrast von Hohenheim gen. Paracelsus medizinische, naturwissenschaftliche und philosophische Schriften: *Achter Band,* Schriften aus dem Jahre 1530, geschrieben in der Oberpfalz, Regensburg, Bayern und Schwaben. *Otto Wilhelm Barth, München,* 1924, 8°, 422 pp.

———: Theophrast von Hohenheim gen. Paracelsus medizinische, naturwissenschaftliche und philosophische Schriften: *Neunter Band,* "Paramirisches" und anderes Schriftwerk der Jahre 1531-1535 aus der Schweiz und Tirol. *Otto Wilhelm Barth Verlag G. m. b. H. München-Planegg,* 1925, 8°, 704 pp.

———: Theophrast von Hohenheim gen. Paracelsus Sämtliche Werke: *I Abteilung,* Medizinische naturwissenschaftliche und philosophische Schriften, *10. Band,* Die grosse Wundarznei und anderes Schriftwerk des Jahres 1536 aus Schwaben und Bayern. *Druck und Verlag von R. Oldenbourg, München und Berlin,* 1928, 8°, 688 pp.

———: Theophrast von Hohenheim gen. Paracelsus Sämtliche Werke: *I Abteilung,* Medizinische naturwissenschaftliche und philosophische Schriften, *11. Band,* Schriftwerk aus den Jahren 1537-1541. *Druck und Verlag von R. Oldenbourg, München und Berlin,* 1928, 8°, 430 pp.

———: Theophrast von Hohenheim gen. Paracelsus Sämtliche Werke: *I Abteilung,* Medizinische naturwissenschaftliche und philosophische Schriften, *12. Band,* Astronomia oder die ganze Philosophia sagax der grossen und kleinen Welt samt Beiwerk, Erklärung der (Nürnberger) Papstbilder, angeblich des Abtes Joachim von Fiore. *Druck und Verlag von R. Oldenbourg, München und Berlin,* 1929, 8°, 629 pp.

SUDHOFF, KARL: Theophrast von Hohenheim gen. Paracelsus Sämtliche Werke: *I Abteilung*, Medizinische naturwissenschaftliche und philosophische Schriften, *13. Band*, Schriften unbestimmter Zeit zur Meteorologie, Kleineres, "Philosophia ad Athenienses," "Manualia," mit zwei Abbildungen. *Druck und Verlag von R. Oldenbourg, München und Berlin*, 1931, 8°, 570 pp.

———: Theophrast von Hohenheim gen. Paracelsus Sämtliche Werke: *I Abteilung*, Medizinische naturwissenschaftliche und philosophische Schriften, *14. Band*, Das Volumen primum der Philosophia magna, Spuria: Unechte, von Johannes Huser grösstenteils für echt gehaltene Schriften unter Hohenheims Namen. *Druck und Verlag von R. Oldenbourg, München und Berlin*, 1933, 8°, 750 pp.

——— and MATTHIESSEN, WILHELM: Theophrast von Hohenheim gen. Paracelsus Sämtliche Werke: *II Abteilung*, Die theologischen und religions-philosophischen Schriften, *Erster Band*, Philosophia Magna I. *Otto Wilhelm Barth, München*, 1923, 8°, 360 pp.

———: Theophrast von Hohenheim, Sieben Defensiones . . . Labyrinthus Medicorum errantium . . . (1538) Eingeleitet und herausgegeben von Karl Sudhoff. *Leipzig, Verlag von Johann Ambrosius Barth*, 1915, small 8°, 94 pp.

WAITE, ARTHUR EDUARD: The Hermetic and Alchemical writings of Aureolus Philippus Theophrastus Bombast, of Hohenheim, called Paracelsus the great. Now for the first time faithfully translated into English. Edited with a biographical preface, elucidatory notes, a copious Hermetic vocabulary, and index by . . . . In two volumes. Vol. I, Hermetic Chemistry. Vol. II. Hermetic Medicine and Hermetic Philosophy. London, James Elliot and Co., 1894. DLC. DSG. ICJ. ICN. MdBW. NJP. ViU.

2. LITERATURE ON PARACELSUS

ABERLE, CARL: Grabdenkmal, Schädel und Abbildungen des Theophrastus Paracelsus, 1, 2, & 3 Heft. Sonderabdrucke, 1887-1891, *Heinrich Dieter in Salzburg*, 8°.

Acta Paracelsica, im Auftrag der Paracelsus Gesellschaft herausgegeben von Ernst Darmstaedter-Richard Koch-Manfred Schroeter, Heft 1-5, mit 3 Bildbeilagen. *München, Verlag der Paracelsus-Gesellschaft*, ca. 1930-1932, 8°. (Contains 15 essays by various authors.)

ALLENDY, RENÉ: Paracelse le Médecin Maudit. *Paris, Librairie Gallimard*, 1937, 8°, 199 pp.

ARTELT, WALTER: Paracelsus im Urteil der Medizinhistorik. Sonderabdruck aus *Fortschritte der Medizin* Nummer 22, Berlin den 28. Oktober 1932, 50. Jahrgang, pp.1-12.

BARTSCHERER, AGNES: Paracelsus, Paracelsisten und Goethes Faust. *Dortmund, Druck und Verlag von Fr. Wilh. Ruhfus*, 1911, 8°, 383 pp.

BECKER, CHRISTIAN AUGUST: Der Boracit, das Geheimmittel des Paracelsus

gegen den Stein. *Mühlhausen in Thüringen, Heinrichshofen'sche Buchhandlung, H. Lichtenberg*, 1868, 12°, 41 pp.

BIRCHLER, LINUS: Die Kindheit des Paracelsus. MEDICUS, FRITZ: Die Wissenschaftliche Bedeutung des Paracelsus. FISCHER, HANS: Helleborus im Altertum und bei Paracelsus. *Druck von Benno Schwabe & Co., Basel*, 1936, 8°, 40 pp.

BURCKHARDT, ALBRECHT: Geschichte der Medizinischen Fakultät zu Basel 1460-1900. *Basel, Verlag von Friedrich Reinhardt, Universitätsdruckerei*, 1917, 8°, 487 pp.

DEMISON, CHRISTINA POLLOCK: The Paracelsus of Robert Browning. *New York, The Baker and Taylor Company*, 1911, 8°, 239 pp.

ENGLERT, LUDWIG: Das Bild vom Arzt bei Paracelsus. Sonderdruck aus *Deutsches Aerzteblatt*, Dec. 21, 1935, pp. 1241-1248.

———: Die Behandlung der Lues in Spiegel der paracelsischen Kritik. Sonderdruck aus Nr. 11 der *Pharmazeutischen Industrie*, 3 pp.

———: Mensch, Arznei und Arzneibereitung bei Paracelsus. Sonderdruck aus *Die Pharmazeutische Industrie*, Heft 3, Berlin, 1 Februar, 1935, pp. 1-7.

———: Paracelsus über den Schmerz, Sonderdruck aus *Shering-Kahlbaum med. Mitt.*, 1935, Vol. 7, pp. 138-142.

———: Theophrast von Hohenheim, Sonderdruck aus der *Zeitschrift für Deutsche Bildung*, 1934, Heft 7/8, *Verlag Moritz Diesterweg, Frankfurt a. M.*, pp. 337-346.

———: Von der rechten Heilkunst, Ein Paracelsus Lesebuch. *Hippocrates-Verlag Marquardt & Cie, Stuttgart*, 1939, 8°, 224 pp.

FRANCÉ-HARRAR, ANNIE: Die Tragödie des Paracelsus, Ein Jahrtausend deutschen Leides. *Stuttgart-Heilbronn, Walter Seifert Verlag*, 1924, 8°, 263 pp.

FREUDENBERG, F.: Paracelsus und Fludd, Die beiden grossen Okkultisten und Ärzte des 15. und 16. Jahrhunderts, Mit einer Auswahl aus ihren Okkulten Schriften. *Berlin W 30, Hermann Barsdorf Verlag*, 1918, 8°, 271 pp.

GUNDOLF, FRIEDRICH: Paracelsus, 2 unveränderte Auflage: 4-6. Tausend. *Georg Bondi in Berlin*, 1928, 8°, 135 pp.

HARTMANN, FRANZ: Die Medizin des Theophrastus Paracelsus von Hohenheim, vom theosophischen Standpunkte betrachtet. Neu durchgesehen und ergänzt von Karl Wachtelborn, II. Auflage. *Theosophisches Verlagshaus, Leipzig*, 1921, small 8°, 262 pp.

———: The Life of Philippus Theophrastus, Bombast of Hohenheim, Known by the name of Paracelsus etc., extracted and translated from his rare and extensive works etc. *London, George Redway, York Street, Covent Garden*, 1887, 8°, 220 pp.

———: The Life and the Doctrines of Philippus Theophrastus, Bombast of Hohenheim, Known by the name of Paracelsus. *New York, The*

Theosophical Publishing Company, 1910, 8°, 367 pp. (translator's name not mentioned).

———: Theophrastus Paracelsus als Mystiker, III. Auflage. *Theosophisches Verlagshaus, Leipzig*, [n.d.], pp. 3-44.

HARTMANN, R. JULIUS: Theophrast von Hohenheim. *Stuttgart und Berlin, F. G. Cotta'sche Buchandlung Nachfolger*, 1904, 8°, 222 pp.

HEPP, CARL: Paracelsus, Dichtung. *Berlin-Leipzig, Modernes Verlagsbureau, Curt Wigand*, 1907, 8°, 259 pp.

HERING, CONSTANTINE: Catalogue of his Paracelsus Library at Hahnemann Medical College of Philadelphia, 1932, 20 pp.

TEN HOOR, MARTEN: Paracelsus and the Philosopher's Stone. Reprint from the *American Journal of Surgery*, New Series, Vol. 30, No. 3, pp. 563-572, New York, 1935.

KAHLBAUM, GEORG W. A.: Ein Vortrag gehalten zu Ehren Theophrasts von Hohenheim . . . zu Basel. *Benno Schwabe, Schweighauserische Verlagsbuchhandlung, Basel*, 1894, 70 pp.

KOLBENHEYER, E. G.: Die Kindheit des Paracelsus, Roman, 1933, *Albert Langen-Georg Müller, München*, Paracelsus I Teil, 8°, 376 pp.

———: Das Gestirn des Paracelsus, Roman, 1933, *Albert Langen-Georg Müller, München*, Paracelsus II Teil, 8°, 483 pp.

———: Das dritte Reich das Paracelsus, Roman, 1930, *München bei Georg Müller*, Paracelsus III Teil, 8°, 401 pp.

KUNZE, GUSTAV: Paracelsus und die Reform der medizinischen Wissenschaft. *Selbstverlag, Berlin-Wilmersdorf, Gasteinerstr. 12*, 1929, 8°, 129 pp.

LESSING, MICHAEL BENEDICT: Paracelsus, sein Leben und Denken, Drei Bücher. *Berlin, gedruckt und verlegt bei G. Reimer*, 1839, 8°, 250 pp.

LEUPOLDT, J. M.: Das System der Medicin des Theophrastus Paracelsus aus dessen Schriften ausgezogen und dargestellt von Dr. H. A. Preu etc. *Berlin, Verlag von G. Reimer*, 1838, 8°, 418 pp.

LIÉNARD, RÉNE-ALBERT: Paracelse (Theophrast Bombast von Hohenheim) 1493-1541, Sa Vie, Son Oeuvre—Etude Historique et Critique. *Lyon, Bosc Freres, M. et L. Riou*, 1932, 8°, 142 pp.

LUND, FRED B: Paracelsus. Reprinted from *Annals of Surgery*, October, 1931, pp. 548-561.

MATTHIESSEN, WILHELM: Die Form des religiösen Verhaltens bei Theophrast von Hohenheim, gen. Paracelsus. Inaugural-Dissertation, *Düsseldorf*, 1917, 53 pp.

MAYER, S.: Paracelsus, Der Badearzt und die Balneologie seiner Zeit. *Bad Kissingen, Otto Levin Verlag*, 1931, 8°, 77 pp.

MOOK, FRIEDRICH: Theophrastus Paracelsus, Eine Kritische Studie. *Würzburg, Verlag der J. Staudinger'schen Buchhandlung*, 1876, 4°, 136 pp.

MÜLLER, GUSTAV: Paracelsus, Drama in Fünf Aufzügen. *Verlag A. Francke, A. G., Bern*, 1925, 72 pp.

NETZHAMMER, RAYMUND: Theophrastus Paracelsus, Das Wissenswerteste über dessen Leben, Lehre und Schriften. *Verlagsanstalt Benziger & Co., A. G., Einsiedeln etc.*, 1901, 8°, 174 pp.

PEUCKERT, WILL-ERICH: Leben, Künste und Meinungen des viel beschriebenen Theophrastus Paracelsus von Hohenheim. *Verlegt bei Eugen Diederichs in Jena*, 1928, 8°, 80 pp.

PROKSCH, J. K.: Paracelsus als medizinischer Schriftsteller, Eine Studie. *Wien und Leipzig, Verlag von Josef Šafář*, 1911, 8°, 86 pp.

———: Paracelsus über die venerischen Krankheiten und die Hydrargyrose, Eine literatur-historische Studie. *Wien, Commissions-Verlag von Toeplitz & Deuticke, Druck von Chr. L. Praetorius*, 1882, 8°, 67 pp.

RECLAM, ERNST HEINRICH: Die Gestalt des Paracelsus in der Dichtung. Studien zu Kolbenheyers Trilogie. *Philipp Reclam jun., Verlag, Leipzig*, 1938, 8°, 106 pp.

REIG, ALFRED: Die Welt des Paracelsus, Leben und Gedanken des ausgezeichneten Doktors der Medizin Theophrastus von Hohenheim, genannt Paracelsus. *Verlag Bika, Stuttgart*, 1937, 8°, 117 pp.

REUSSNER, BARTHOLOMAEUS: Eine kurze Erklerung und Christliche widerlegung Der unerhörten Gotteslesterungen und Lügen welche Paracelsus in den dreye Büchern Philosophie ad Athenienses hat wider Gott sein Wort und die löbliche Kunst der Artzney ausgeschüttet. Zur Warnung aller fromen Christen geschrieben. *Gedruckt zu Gorlitz durch Ambrosium Fritsch*, 1570, 12°, [n.p.]

SCHEER, HERMANN: Meister Peter Volck aus Holstein Wundarztes zu Delft Vorrede zu seiner Übersetzung des ersten Buches der Grossen Wundarznei des Theophrast von Hohenheim. *Leipzig*, 1925, 28 pp.

SCHLEGEL, EMIL: Paracelsus in seiner Bedeutung für unsere Zeit. *Verlag der Aerztlichen Rundschau (Otto Gmelin), München*, 1907, 8°, 174 pp.

SCHLUETER, ROBERT E.: Fact and Fiction in the Names and Titles of Paracelsus. Reprinted from *Annals of Medical History*, New Series, Vol. 7, No. 3, pp. 274-284, 1935.

———: Paracelsus (Theophrastus Bombast von Hohenheim, 1493-1541). Reprint from the *Interstate Medical Journal*, Vol. XIX, No. 10, 1912, 9 pp.

———: The First Aphorism of Hippocrates as explained by Paracelsus. Reprinted from the *Annals of Science*, Vol. 1, No. 4, October, 1936, pp. 453-461.

SCHNEIDT, WILHELM: Die Augenheilkunde des Theophrastus Paracelsus von Hohenheim. Inaugural Dissertation, *München, Druck von Franz X. Seitz*, 1903, 21 pp.

SPUND, FRANZ: Paracelsus, mit 1 Faksimile und 31 Abbildungen. *Verlag Karl König, Wien und Leipzig*, 1926, 8°, 175 pp.

STANELLI, RUDOLPH: Die Zukunfts-Philosophie des Paracelsus als Grundlage einer Reformation für Medicin und Naturwissenschaften. *Wien, Verlag von Carl Gerold's Sohn*, 1884, small 8°, 246 pp.

STILLMAN, JOHN MAXSON: Paracelsus, his personality and influence as a physician, chemist and reformer. *Chicago-London, The Open Court Publishing Co.*, 1920, 8°, 184 pp.

STODDART, ANNA M.: The Life of Paracelsus, Theophrastus von Hohenheim 1493-1541. *London, John Murray, Albermarle Street W.*, 1911, 8°, 209 pp.

STRUNZ, FRANZ: Paracelsus, Eine Studie. *Verlag von Huber & Co., Frauenfeld und Leipzig*, 1924, 12°, 102 pp.

———: Theophrastus Paracelsus, Idee und Problem seiner Weltanschauung. *Verlag Anton Pustet, Salzburg-Leipzig*, 1937, 8°, 214 pp.

———: Theophrastus Paracelsus, sein Leben und seine Persönlichkeit—Ein Beitrag zur Geistesgeschichte der deutschen Renaissance. *Verlegt bei Eugen Diederichs, Leipzig*, 1903, small 8°, 127 pp.

SUDHOFF, KARL: Paracelsus, Ein deutsches Lebensbild aus den Tagen der Renaissance. *Bibliographisches Institut A. G., Leipzig*, 1936, small 8°, 157 pp.

———: Versuch einer Kritik der Echtheit der Paracelsischen Schriften, *I. Theil* Die unter Hohenheims Namen erschienenen Druckschriften—*Bibliographia Paracelsica. Berlin, Druck und Verlag von Georg Reimer*, 1894, 8°, 722 pp.

———: Versuch einer Kritik der Echtheit der Paracelsischen Schriften, *II. Theil* Paracelsische Handschriften, *I Hälfte. Berlin, Druck und Verlag von Georg Reimer*, 1898, 8°, 432 pp.

———: Versuch einer Kritik der Echtheit der Paracelsischen Schriften, *II. Theil* Paracelsische Handschriften, *I Hälfte. Berlin, Druck und Verlag von Georg Reimer*, 1899, 8°, pp. 433-815.

SURYA, G. W.: Die Spagyriker: Paracelsus-Rademacher-Zimpel, 3 portrait plates. *Linser-Verlag G. M. B. H., Berlin-Pankow*, 1923, 8°, 347 pp.

Umbruch des Gesundheitswesens im Geiste des Paracelsus, Forderungen der deutschen Volksheilbewegung auf ihrer Jahrhundertfeier Pfingsten, 1936 in Nürnberg, *Schriften des Vereins Deutsche Volksheilkunde*, Band 4, 8°, 147 pp.

VOGT, JOHANN: Theophrastus von Hohenheim Oder Deutliche Endeckung was von Theophrasto Paracelso zu halten sey ob er seine hohe Weissheit und Kunst von Gott oder dem Teufel gehabt . . . *Gosslar In verlegung Hans und Heinrich Stern Buchhendelers zu Lüneburgk* Anno 1617, 12°, [n.p.] [Not in Sudhoff]

WALTERSHAUSEN, BODO S. FREIHERR VON: Paracelsus am Eingang der Deutschen Bildungsgeschichte, 1936, *Verlag von Felix Meiner in Leipzig*, 8°, 216 pp.

WOLFRAM, E.: Die okkulten Ursachen der Krankheiten (Volumen Paramirum des Paracelsus). *Leipzig, Verlag von Max Altman*, 1912, 8°, 263 pp.

———: The Occult Causes of Disease, done into English by Agnes Blake. *Rider & Co., Paternoster Row, London E. C. 4*, [n.d.], 12°, 296 pp.

3. Old Books by Various Authors Mentioned in Sudhoff's Bibliographica Paracelsica or Bound with Paracelsus Items in the Schlueter Collection

Alchemiae, quam vocant, artisque metallicae doctrina. . . . 8°. *Basileae, Petrus Perna*, 1572. 2. ed. [See Sudhoff p. 242.]

von Bodenstein, Adam: Herrlicher Philosophischer rhatschlag zu curirn Pestiletz Brüstgeschwer Carfunckl: dardurch auch andere gyfft so in speiss oder tranck eingenommen usigetriben mögen werden sampt gyfftiger thieren biss alss rasender hunden und schlangen etc. *Basel*, 1577, 8°, 54 pp. [Bound with 68, 95, 132, 151, 170, 171, 172, 199]

Cardilucius, Johann Hiski: Magnalia Medico-chymica Continuata, Oder Fortsetzung der hohen Artzney- und Feuerkunstigen Geheimnüssen. . . . *Nürnberg In Verlegung Wollfgang Moritz Endter und Johan Andreae Endters seel. Söhnen*, Anno 1680, 8°, 818 pp. [Bound with 405]

Chrysippus, Joannes: De arte metallicae metamorphoseos Liber singularis. . . . An Alchemia sit ars legitima. *Basilae apud Petrum Pernam*, 1576, 12°, 118 pp. [Bound with 181] MH. NN.

Clodius, Balduin: Officina chymica. 1620. [See Sudhoff p. 565] DSG.

de Comitibus, Ludovicus: Disceptatio Practicae Manualis experimento veraciter comprobata. De duabus Artis et Naturae miraculis: hoc est Liquore Alchaest, Lapide Philosopho, Sale Volatili: etc. . . . *Francofurti Apud Hermannum á Sande*, 1664, 12°, 116 pp. [Bound with 419] CtY. MH.

Doringius, Michael: De medicina et medicis adversus iatromastigas et pseudiatros. Libri II. In quibus non solum generatim medicinae origo, progressus, dignitas, et medici officium prolixe asseritur: sed etiam . . . Hippocraticae et Galenicae praestantia; . . . Paracelsicae . . . : *Giesse Hêssorum, Typis Nicolai Hampelie*, 1611, in-12 de VI + 334 pp. [Acta Paracelsica 203]

Dorn, Gerhard: Clavis Totius Philosophiæ Chymisticae. 12°. *Lugduni, Apud hæredes Jacobi Junctæ*, 1567. [See Sudhoff p. 148]

———: De Meteoris liber unus. De Matrice liber alius. . . . 8°. *Basileae, Petrus Perna*, [n.d.] [1569?] [Bound with 97, 98-101] [See Sudhoff p. 683]

Dubrava, Jan: De Piscinis et Piscium qui in eis aluntur naturis. s. l. (*Basel*) 1559. Xenocratis De Alimentis ex Aquatilibus Animantium Libellus gr. et lat. a Jo B. Rosario, c. schol. Conr. Gesner. (Ibid. 1559) 8°. 7 ff. prel. + 136 pp. + 1 fl. l. + 36 ff. [Bound with 39] MH.

Epimetheus, Franciscus: Pandora. 8°. *Basel*, 1598. [See Sudhoff p. 426]

Erastus (Liebler), Thomas: Disputationum de Medicina Nova Philippi Paracelsi partes I et II, c. ind. et effigies, *Basileae, apud Petrum Pernam*, 1572, Pars prima 267 pp., pars altera 284 pp., Explicatio quaestionis 123 pp., Epistola de Natura Materia 143 pp., 8°.

ETSCHENREUTTER, GALLUS: Aller heilsamen Bäder und Brunnen Natur. *Strassburg, Christian Müller*, 1571, 8 B11., 199 pp. & index with pretty woodcut, 12°. [Bound with 77 & 172]

GLAUBER, JOHANN RUDOLPH: Continuatio operum chymicorum, Bücher und Schrifften. 1659. [See Sudhoff p. 596]

———: Pharmacopoeae Spagyricae Oder Gründlicher Beschreibung wie man aus den Vegetabilien, Animalien und Mineralien, auff eine besondere und leichte Weise gute kräfftige und durchdringende Artzneyen zurichten und bereiten soll. Erster Theil. *Nürnberg, In Verlegung Wolffgang der Jüngern und Johann Andreae Endters*, anno 1654, 12°, 78 pp. [Bound with 366] CtHT. CtY. DSG.

———: Pharmacopoeae Spagyriae, Ander Theil, De Vegetabilium, Animalium, & Mineralium praeparatione per Solvens Universale. In welchem Klärich bewiesen. . . . Zu *Amsterdam Bey Johan Jansson*, 1656, 12°, 141 pp. [Bound with 366] CtHT. CtY. DSG.

———: Pharmacopoeae Dritter Theil, In Welchem beschrieben und gelehret wirdt wie durch Saltz und Fewer die Vegetabilien, Animalien und Mineralien nach Spagyrischer manier und weiss auf höchste gewaschen. . . . Zu *Amsterdam Bey Johan Jansson*, 1657, 12°, 48 pp [Bound with 366] CtHT. CtY. DSG.

GOEBEL, JOHANN: Beschreibung der zweien warmen Bäder, so im Lande zu Meissen nahe bei dem löblichen Bergstädten Annaberg und Wolkenstein gelegen sind. *Dresden durch Gimel Bergen*, 1576, 12°, 100 pp. [Bound with 77 & 172]

GRATAROLUS: Veræ alchemiæ artisqve metallicae, citra aenigmata, doctrina, certvsque modus, scriptis tum nouis tum ueteribus nunc primum & fideliter maiori ex parte editis, comprehensus: quorum elenchum a Præfatione reperies. . . . Ed. by Wilhelm Gratarolo of Bergamo. fol. *Basileae per Henricum Petri & Petrum Pernam*, 1561. [See Sudhoff p. 64] DLC.

LE BAILLIF, ROCH: Le Demosterion de Roch Le Baillif Edelphe Medecin Spagiric. Auquel sont contenuz Trois cens Aphorismes Latin et François. Sommaire veritable de la Medecine Paracelsique, extraite de luy en la plus part, par le dict Baillif. 8°. *Rennes, Pierre le Bret marchant Libraire*, 1578. [See Sudhoff p. 314]

LEONICENUS, NICOLAS: De Plinii et Aliorum Medicorum Erroribus Liber. *Excudebat Henricus Petrus, Basileae*, Mense Junio An: 1529, 8°, 318 pp.

ΜΕΓΑΛΗ ΧΥΜΙΑ. *Berlin, Nicolaus Voltze*, 1583. With the second part of Onomasticon of 1583 [S. 194] published with new title page in 1587. [Bound with 194, etc.] [See Sudhoff p. 365]

v. OSTEN, HANS: Eine grosse Herzstärkung für die Chymisten nebst einer Dose voll gutes Niesepulver, für die unkundigen Widersprecher der Verwandlungskunst der Metalle im Kloster zu Oderberg seit Anno

1426 aufbehalten. . . . Frontispiece & one chart, *Berlin in Commision bey dem Antiquarius Johann Friedrich Vierweg*, 1771, small 8°, 108 pp. [Bound with 464] DLC.

LE PELLETIER, JEAN: L'alkaest ou le dissolvant universel de Van-Helmont, revelé dans plusieurs Traitez qui en découvrent le Secret. *A Rouen chez Guillaume Behourt*, 1704, 12°, 256 pp. [Bound with following book] DSG.

———: L'Art ou la Maniere de volatiliser les Alcalis . . . tirez der Ouvrages de Starkey. *A Rouen chez Guillaume Behourt*, 1706, 12°. 199 pp. [Bound with preceding book]

RANTZOVIUS, HENRICUS: Wie die Menschliche Gesundheit nicht allein täglichen im hin unnd här reysen . . . zu erhalten sondern auch so dieselbig corrumpieret wie sie wider zu recht zu bringen seye. . . . *Getruckt zu Basel durch Sebastianum Henricpetri*, 1637, den XII. Julii, 12°, 8 leaves, 440 pp. [Bound with 66]

RHENAN, JOHANNES: Opera Chymiatrica, Quae hactenus in lucem prodiderunt omnia a plurimis. Quae in prioribus editionibus irrepserant . . . *Francofurti, Sumptibus Conradi Eifridi*, Anno 1635, 12°, 367 pp. (Acta Paracelsica 208)

SEVERINUS, PETRUS: Idea Medicinae Philosophicae, Fundamenta Continens totius doctrina Paracelsicae etc., *Basileae, Sixti Henricpetri*, Anno 1571, 8°, 430 pp. DSG.

VON SUCHTEN, ALEXANDER: Liber unus De Secretis Antimonii. Das ist von der grossen heymligkeit des Antimonii die Artzney belangent. *Getruckt zü Strassburg bey Christian Müllers Erben*, Anno 1570, 8°, 142 pp. [Bound with 161, 165, 179 & 180] [Another copy bound with 120] [See Sudhoff p. 52]

Theophrastus Redivivus, Illustratus, Coronatus et Defensus. 4°. *Hamburg, Zoffingen*, 1663. [See Sudhoff p. 606]

THURNEISSER ZUM THURN, LEONHART: Quinta Essentia, Das ist Die höchste subtiliter krafft und wirkung beyder der fürtrefflichsten und menschlichen geschlecht am nützlichsten Künsten der Medicin und Alchemy . . . *Gedruckt zu Leipzig Bey Hans Steinman Typis Voegelianis*, 1574, fol. 212 pp. [Bound with 62] NjP.

VENTURA, LAURENTIUS: De ratione conficiende Lapidis philosophici, liber Vnus. AD OTHONEM HENRICUM Principem Palatinum. Huic accesserunt eiusdem Argumenti Ioan: Garlandi Angli liber Vnus. Et ex Specula magno Vincentii libri Duo. *Baseleae*, 1571, 12°, 203 pp., 121 pp. & 173 pp. [Bound with 181]

DUCTUS VENOSUS [ARANTII] AND DUCTUS ARTERIOSUS [BOTALLI]

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It was the writer's intention to produce, in connection with experimental research upon the same subject, a comprehensive historical survey of the growth of knowledge about the foetal cardio-vascular apparatus and foetal circulation. The War, however, makes it improbable that the story can be completed for some considerable time to come, so it seems worth while to publish this short *interim* note about the two foetal blood channels named in the title.

The first accounts of the foramen ovale and ductus arteriosus were due to Galen (Kühn, IV, 243-246, III, 514). Needham (1934, 54) credited him, in addition, with a knowledge of the ductus venosus, but the present writer has failed to discover any passage in which such knowledge is exhibited, and Fabricius of Aquapendente, who knew Galen's works very well, stated (1624, Part II, 56) that Galen was ignorant of a direct caval connection of the umbilical vein. "Haec igitur insertionis venae (umbilicalis) in jecur causa est. In jecur autem inseritur, non sane in jecoris substantiam, sed in truncos, non quidem portae tantum, ut dicit Galenus, sed in portae, & cavae truncum . . .".

After Galen no one wrote anything about the special foetal blood channels until 1561, when Gabriele Falloppio (1523-1562 ?3) described the ductus arteriosus alone in his "Observationes anatomicae." The sole improvement that he made on Galen's description was that he said the vessel was of large calibre.

Bartolomeo Eustacchio (-1574) was credited by Haller (1764) with having pictured the ductus venosus, but examination of the illustration in question does not, in the present writer's opinion, in any way substantiate the claim.

In 1564 there appeared *Examen observationum Falloppii*, which had been written by Vesalius (1514-1564) in 1561 but which, for various reasons, remained unpublished for three years. In this reply

to the criticisms of his ex-pupil, Vesalius gave the first account of what we now call the ductus venosus. The umbilical vein, he said, joins the trunk of the portal vein and, thereafter, from the posterior portion of this trunk a branch, less than half as wide as the umbilical vein, passes up to enter the trunk of the vena cava on its anterior aspect about the level of distribution of this vessel's hepatic branches.

The same year, 1564, saw the publication of *De humano foetu libellus* of Giulio Cesare Aranzi (1530-1589) of Bologna. The first edition is very rare, but a copy is in the Surgeon-General's library, and reference to it shows that Aranzi in that year made no mention of the ductus venosus. According to Portal and Puschmann, there was a second publication of the book in 1571, but the present writer has been unable to obtain access to a copy. The 1579 edition, edited by Aranzi's pupil, Laurentius Scholzius, did contain an account of the ductus venosus. Haller (1764) may have been responsible for the attribution of the discovery to Aranzi, and certainly " ductus venosus Arantii " began to appear after Haller's time in the German literature. Finally, " ductus venosus [Arantii]," became the accepted title in the Basel anatomical nomenclature. It is obvious that we should refer rather to the " ductus venosus [Vesalii]," and it would not be a bad thing to remember in this way the father of anatomy.

Also in 1564 appeared a short work by Leonardo Botallo, in which he claimed to show the way, hitherto unknown, by which the blood passes into the left ventricle. The note, for it is nothing more than that, was published in Paris (1564) after the author's *De catarrho*, and was republished in Lyons in the following year. The present writer has not had access to a copy of the 1564 printing, but the British Museum has a copy of that printed in 1565.

Botallo began by saying that he was led to his discovery through the discrepancy between the accounts given by Galen and by Colombo respectively about the blood-pathway from the right to the left side of the heart.* After previously attempting without success to check these accounts, he had returned once again to the task and, while dissecting a calf's heart, had found a fairly large " ductus " leading directly into the left auricle from just above the coronary vein

* Incidentally, as van Horne pointed out in his footnote in 1660, Botallo was incomplete in his description of Galen's ideas, and inaccurate in his statement about Colombo's findings.

(opening of the coronary sinus). This " ductus " or " vena " could, he said, be called the nutrient vessel of the arteries and of the vital spirits, because " arterial blood " (i. e., presumably, blood *for* the arteries or, in a proleptic sense, blood that was to become arterial) was carried through it into the left ventricle and thereby into all the arteries. The pathways suggested by Galen and by Colombo respectively were not, therefore, the true ones. The one found by Botallo was fairly large and open in calves, pigs, and dogs. In man, on the other hand, it was somewhat smaller and its course was more tortuous; in addition, it was apparently guarded on both sides by valves. Hence, coagulated blood (ordinary venous blood in the right side of the heart was regarded as coagulable) was not encountered in the left ventricle of man, but was so in that of (lower) animals.

Botallo had, obviously, stumbled upon the persistence of the foramen ovale that can occur in the adult mammal, but it was left for Harvey (1628. Cap. VI, 35) to put the discovery into its right place in the scheme of things. In the chapter in question Botallo was the only author besides Aristotle whom Harvey mentioned, so the discoverer of the circulation may have helped to keep Botallo's name fresh in the minds of others. Incidentally, it is strange that Botallo had no negative findings to report—an uninterrupted series of patent foramina ovalia in the species mentioned is certainly remarkable!

Now as to the subsequent story. In 1641 Caecilius Folius reprinted Botallo's short note. Then, in 1660, it re-appeared as *Observatio anatomica III* on pp. 76-80 of *Opera Omnia*, edited by J. van Horne. It had been annotated by the editor and had been given the title, *Vena arteriarum nutrix, a nullo antea notata.* In addition, between pp. 68 and 69 there had been inserted a plate, presumably by van Horne, in figs. 2 and 3 of which were depicted the " foramen ovale " and its valve, and the ductus arteriosus (" canalis à pulmonali arteria tendens in aortam "). There is no evidence, so far as the present writer knows, to show that Botallo's original account had been illustrated. We must, therefore, believe that writers subsequent to 1660 referred to *Opera Omnia,* were misled by van Horne's insertion of the plate (e. g., Haller, 1776, speaks of Botallo's fig. 2), and thereby ascribed to Botallo a knowledge not only of the foramen ovale, but also of the ductus arteriosus. The impression might have been confirmed for a casual reader who caught sight of

the words "ductus" and "arterialis" not far from one another in the text. But the more careful reader would have been warned by van Horne's long footnote about the priority of Galen, and would also have been referred to subsequent writers. Hence there was no excuse for anyone to attach the name of Botallo to either the foramen ovale or the ductus arteriosus.

Who first did so the present writer has not discovered, but it is evident from various sources that the term "ductus arteriosus Botalli," like the term "ductus venosus Arantii," was transmitted through the German literature to appear finally as "ductus arteriosus [Botalli]" in the Basel anatomical nomenclature. The French term, "trou de Botal," applied to the foramen ovale, is more correct, as Fromberg (1915) pointed out, but even it should properly be applied to a foramen that remains patent in post-natal life. "Trou de Galien" would be more correct for the ordinary foramen ovale.

In conclusion, then, we may say that the ductus arteriosus should be styled [Galeni], and the ductus venosus [Vesalii], if we wish to preserve in our anatomical terminology the names of discoverers. We may, on the other hand, omit them altogether, as the Anatomical Society of Great Britain and Ireland did in its suggested revision of the Basel nomenclature.

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REFERENCES

1. Anon. (1933). *Final report of the Committee appointed by the Anatomical Society of Great Britain and Ireland on June 22nd, 1928, 'to consider proposals to the Society for the revision of the B. N. A. . . .'* University Press, Glasgow.
2. Arantius, J. C. (1564). *Julii Caes. Arantii Philosophi, ac Medici Bononiensis Medicinae, ac Anatomes publici professoris De humano foetu libellus.* Sacris Medicorum, ac Philosophorum, Collegiis Bonon. Bononiae, Ex officina Joannis Rubrii ad insigne Mercurii. MDLXIIII.
3. *Idem* (1579). *Jul. Caes. Arantii Bononiensis, Philosophi ac medici Clarissimi, Medicinae ac Anatomes in celeberrimo Bononiensium gymnasio professoris publici, De Humano Foetu Libellus.* A Laurentio Scholzio, Silesio, eius discipulo, in lucem editus. Basileae.

4. Botallus, L. (1564). Original not accessible. Reproduced as appendix (pp. 259-261) to Caecilius Folius (1641), with the description, "Post librum de Catharro editum primo Parisiis apud Bernardium Turrisanum. In via Jacobea, in Aldina Biblioteca Anno Salutis 1564. & Rursus Lugduni anno 1565."
5. *Idem* (1565). *Commentarioli duo . . .* , followed by *De catarrho, in cuius fine addita est figura monstrosorum renum in cadavere repertorum: ostenditur etiam locus per quem fertur sanguis in sinistrum cordis ventriculum, nondum antea cognitus.* Title of this last is given on pp. 180-182 as *Vena arteriarum nutrix à nullo antea notata* [It was more accurately reproduced by van Horne (1660) than by Folius (1641)]. Lugduni, apud Antonium Gryphium.
6. *Idem* (1641). See Veslingius Mindanus, Joannes (1641). *Syntagma anatomicum (acc. Caecilius Folius, Galenus et L. Bottallus de sanguinis a dextro in sinistrum cordis ventriculum via).* Francof.
7. *Idem* (1660). *Observatio anatomica III. Vena arteriarum nutrix, a nullo antea notata,* pp. 66-70 in *Opera omnia medica & chirurgica,* ed. by J. van Horne. Lugduni Batavorum, Ex Officina Danielis & Abrahami à Gaasbeck.
8. Fabricius, Hieronymus, ab Aquapendente (1624). *Tractatus quatuor. Quorum I De formato foetu. . . .* [See Part II, p. 56, of *De formato foetu*]. Francofurti, Impensis Jacobi de Zetter, Typis Hartm. Parthenij.
9. Falloppius, G. (1561). *Observationes anatomicae,* in *Opera omnia, in unum congesta, & in medicinae studiosorum gratiam excusa,* 1600. Francofurti apud haeredes Andreae Wecheli, Claud. Marnium & Jo. Aubrium.
10. Folius, Caecilius (1641). See Botallus, L. (1641).
11. Fromberg, C. (1915). "Historische Korrektur." *Zbl. Herz- und Gefässkr., 7,* 60-61.
12. Galen (2nd century, A. D.). *De usu partium,* Lib. VI, cap. XXI, and Lib. XV, cap. VI (Kühn, III, p. 514 and IV, pp. 243-246).
13. Haller, A. von (1764, 1766). *Elementa physiologiae corporis humani,* Vol. VI (1764), Lib. XXIII, Sect. I, p. 481, footnote *z* and Vol. VIII (1766), Lib. XXIX, Sect. IV, p. 383.
14. Harvey, W. (1628). *Exercitatio anatomica de motu cordis et sanguinis in animalibus.* Francofurti, Sumptibus Gulielmi Fitzeri.
15. Needham, J. (1934). *A history of embryology.* Cambridge University Press.
16. Puschmann, Th. (1903). *Handbuch der Geschichte der Medizin,* herausgegeben von Max Neuburger und Julius Pagel, Vol. II. Jena, Verlag von Gustav Fischer.
17. Vesalius, A. (1564). *Examen observationum Falloppii.* Venetiis.

JACOB HENLE AND WILLIAM FARR

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Just over one hundred years ago, in 1840, there appeared in Berlin the *Pathologische Untersuchungen* of Jacob Henle. This event is significant in the history of medicine because of the first paper in this volume, *Von den Miasmen und Kontagien*, in which Henle clearly stated the theory that infectious disease was produced by living organisms. The merits of this publication have been sufficiently recognized and need not be repeated here.

While Henle's work had but little immediate influence on the development of bacteriology—it was not until thirty years later that Koch established the validity of his theory—yet it is extremely interesting to note that this paper did exert an immediate influence on the thought of a contemporary scientist working in a different albeit related field of medicine. This was William Farr, the great British vital statistician of the 19th century.

As far as I have been able to ascertain this circumstance is not mentioned by any of the writers who have concerned themselves with Henle's life and work. This fact alone is sufficient justification for directing attention to an hitherto neglected aspect of Henle's contribution to the study of disease. In establishing a link between the work of the German scientist and his English contemporary we are also enabled to obtain a glimpse of the manner in which Henle's theory was received in Great Britain.

In 1837 civil registration of births, deaths, and marriages was instituted in Britain, and Mr. T. H. Lister was appointed as the First Registrar-General. It was soon realized that some one equipped to deal with the accumulated vital statistics in a scientific manner was needed in the newly established General Register Office, and William Farr was selected for the post of Compiler of Abstracts. The official announcement of his appointment in which reference is made to " Mr. Farr, a gentleman of the medical profession, whose scientific knowledge and intimate acquaintance with statistical in-

quiries are ample pledges of his peculiar fitness for the post" is a most concise statement of his eminent qualifications for the position.

Farr had already earned a reputation in the field of vital statistics as a result of a number of notable papers that appeared in the *Lancet* and other publications. In 1837 he had written a very valuable article on "Vital Statistics" for McCulloch's *Account of the British Empire*, and in the following year he contributed another important paper on "Benevolent Funds and Life Assurance in Health and Disease" to the *Lancet*. His appointment to the Registrar-General's office was followed by the issue of an invaluable series of reports which exerted an important and beneficial influence on the progress of public health in Great Britain.

The link between Henle and Farr is to be found in a note by the latter which appeared in the Registrar-General's Second Annual Report (pp. 95-8). In this note Farr attempted to establish a general law for the progress of an epidemic. Apparently he was stimulated by Henle's essay to undertake this attempt.

Farr's note begins with the statement that: "Epidemics appear to be generated at intervals in unhealthy places, spread, go through a regular course, and decline; but of the cause of their evolutions no more is known than of the periodical paroxysms of ague. The body, in its diseases as well as its functions, observes a principle of periodicity; its elements pass through prescribed cycles of changes, and the diseases of nations are subject to similar variations."

To this passage Farr appended a foot-note on the most recent investigations of the causes of epidemic disease. In it he says: "The hypothesis that the causes of epidemics are generations of minute insects transmitted from one individual to another, through the medium of the atmosphere, has been ingeniously put by Dr. Holland in his "Medical Notes and Reflections." Henle, of Berlin, has supported the theory by new facts and analogies. The diffusion of contagion has a close analogy with fermentation; and Cagniard-Latour and Schwann have shown that fermentation is the decomposition of organic fluids by minute vegetables of the lowest class. Putrefaction is a destruction of organic matter effected by infusoria, and not a mere decomposition into elements. One contagious disease, the muscardine of the silkworm, is known to depend on the develop-

ment of a vegetable parasite. The germs are innumerable, and spread with the greatest rapidity. In mixtures, certain genera of infusoria appear, and then give place to new genera. Individual cases of disease may be caused by one generation of parasites; an epidemic by successive generations. Each epidemic disease has its specific animal contagion, its specific genera of infusoria. Henle has proved the existence of this cause, and the truth of the theory in every way but one; he has never seen the epidemic infusoria. The omission is, no doubt, important; and the more so, on the part of Henle, who is justly considered one of the best microscopic observers in Germany. The infusorial hypothesis does not satisfactorily explain the cause of epidemics; it accounts for them by the creation of animalcules, but does not show why the animalcules are created at distant times in swarms. The phenomena of swarms of insects, blight, and of infusorial generation, may suggest investigation; but in the present state of pathology they cannot supply its place."

In view of the situation to which the hypothesis of Contagia Animata had been advanced by Henle's work, as well as of the inadequacies which it still exhibited, Farr determined to study epidemic phenomena in order to establish the laws which govern them. Thus he continues in his paper: "If the latent cause of epidemics cannot be discovered, the mode in which it operates may be investigated. The laws of its action may be determined by observation, as well as the circumstances in which epidemics arise, or by which they may be controlled."

For his investigation Farr employed the total quarterly deaths from smallpox during 1838-1839. These totals were compared with a "regular series of numbers . . . calculated upon the hypothesis that the fall of the mortality took place at a uniformly accelerated rate." The results of his study showed that the course of an epidemic was a regular and orderly phenomenon. The epidemic rises until it reaches a point of maximum intensity, "where it remains stationary, like a projectile at the summit of the curve which it is destined to describe." Then it declines "until the disease attains the minimum intensity, and remains stationary." In other words the course of the epidemic may be compared to the curve described by the path of a projectile.

Now, in what manner did Farr learn of Henle's work? The answer to this question is given by Farr himself, for at the end of the footnote cited above he indicates a review of the *Pathologische Untersuchungen* in the *British and Foreign Medical Review* for April 1840 as the source of his information. It seems quite evident then that when Farr wrote his note for the Second Annual Report he knew of Henle's work only at second hand. This fact renders the influence which Henle apparently exerted on him all the more impressive.

However, some light can be thrown upon this circumstance by turning to the review of Henle's book which Farr read. The reviewer introduces his discussion with the following statements. "We are rarely sanguine," he says, "of finding much that is profitable in German works on Pathology; but if there be a writer in that country from whom more than from any other we should anticipate solid excellence in whatever subject he undertakes, it is Dr. Henle, the laborious and clever assistant of Professor Müller. Though young, his reputation in anatomical science is already among the highest in Europe, and the character of his annual account of the progress of pathology, in Müller's *Archiv*, is sufficient proof of his learning, if not of his knowledge in that department.

The work before us (i. e. *Pathologische Untersuchungen*) is the first of Dr. Henle's that we have seen in which excellence is alloyed. With much that exhibits an extensive theoretical knowledge of medicine, it contains much more that affords evidence of ignorance of its practice. But we will give, in a connected form, the substance of the first two and best of the four papers, whose subjects are Contagion and Sympathy."

From this statement two pertinent conclusions may be drawn. First, that Henle's scientific reputation was an excellent one at the time his book was published, and that British physicians, or at least those who kept in touch with medical literature, were well acquainted with his previous work. Secondly, it is clear that while the opinion of the reviewer quoted above, was not very favorable towards Henle's book as a whole, the merits of his essay on contagion were recognized. Indeed the reviewer concludes his long and detailed summary

of Henle's paper by commenting on the strong case which he has presented in favor of the contagium vivum.

Thus it is not unlikely that William Farr's readiness to accept Henle's conclusions at second hand may have been due in some degree to a knowledge of his reputation and previous labors. Whatever the reason, it is evident that Farr was influenced by Henle's essay, and was stimulated to write his note on the course of epidemics.

BIBLIOGRAPHY

1. Farr, William—Vital Statistics. Edited by N. A. Humphrey. London, 1885, pp. 317-20.
2. British and Foreign Medical Review. Vol. IX, 1840, pp. 398-404.

MEDICO-HISTORICAL NEWS AND ACTIVITIES

International Society of the History of Medicine

A very encouraging sign that the International Society is carrying on in spite of the hard times is to be seen in the admission of the *Chinese Medical History Society* to constituent membership with Dr. Bernard E. Read as national delegate and member of the Permanent Committee.

News from Constituent Societies

All members of *The New York Society for Medical History* and others were especially invited to attend the first meeting of the new Session on History of Medicine that was held at the Annual Meeting of the Medical Society of the State of New York in Buffalo, Hotel Statler, Wednesday afternoon, April 30, 1941, at two o'clock.

The program was as follows:

Chairman .....Emerson C. Kelly, M. D., Albany
Vice-Chairman ..George Rosen, M. D., Brooklyn
Secretary .....Edward F. Hartung, M. D., New York.

1. "Helmholtz in Medicine"
   Eliott B. Hague, M. D., Buffalo

2. "Horace Nelson and His Lancet"
   Leonard J. Schiff, M. D., Plattsburg

3. "Adirondack Medicine—A Historical Outline"
   LeRoy H. Wardner, M. D., Saranac Lake

4. "General John Cochran"
   T. Wood Clarke, M. D., Utica

The *Johns Hopkins Medical History Club* held its third meeting of the year on Monday, April 21, 1941 at 8.30 p. m. in the Lecture Hall of the Institute of the History of Medicine, 1900 East Monument St., Baltimore, Md. The following program was given:

Chairman, DR. WILLIAM G. MACCALLUM

1. Joseph W. Gleitsmann, A Pioneer in Tuberculosis Work. [In Commemoration of the One Hundredth Anniversary of His Birth, 1841-1941]

   DR. PHINEAS J. SPARER
   Baltimore City Health Department

2. Disease and Social Criticism

   DR. GEORGE ROSEN
   Brooklyn

The *William H. Welch Society of New York University College of Medicine* and the College Medical Society held a joint evening meeting on April 14, 1941 at which Professor Arturo Castiglioni spoke on *Ancient Medicine in Modern Times*.

NATIONAL NEWS

The *School of Dentistry of Washington University* celebrated the 75th anniversary of its foundation from April 7 to 12, 1941. In 1866 the Missouri State Dental Association was organized and at its first annual meeting, it took steps to organize the *Missouri Dental College*, the sixth Dental College in the world and the first west of the Mississippi. In 1892 the Missouri Dental College became a department of Washington University.

NEWS FROM ASIA

The *Chinese Medical History Society* has received $12,000 from Dr. Wu Lien-teh of Malaya for the purchase of books on medical history and $10,000 from Dr. Yao of Macao for medical history publications. The September 1940 number of the *Chinese Medical Journal* (Vol. 58, No. 3) was published as a *History of Chinese Medicine Number* with the following content:

Autographs of Three Famous Physicians of the Ch'ing Dynasty
K. C. WONG

Ten Celebrated Physicians and Their Temple ..... LEE TAO

Lü Tsu and His Relation to Other Medicine Gods in Chinese Medical Lore ..... LEE S. HUIZENGA

Scarlet Fever in Chinese Indigenous Medicine.....YÜN-HSIU YÜ

Beriberi in Ancient Chinese Medical Literature..H. C. HOU and C. M. YU

Short Historical Notes on Vitamin Deficiency Diseases in China LEE TAO

History of Gastro-Intestinal Diseases in China .....T. Y. SUNG

The Louse, Crab-louse and Bedbug in Old Chinese Medical Literature with Special Consideration of Phthiriasis ..R. HOEPPLI and I-HUNG CH'IANG

Editorial—Historical Development, Present Status and Future Prospect of Helminthology in China .....H. F. HSÜ

BOOK CATALOGUES

The Hoosier Bookshop, 2135 North Alabama Street, Indianapolis, Ind., List No. 83, Surgery, A Catalogue of Representative Works in American Surgical Literature with a Small Group of Foreign Contributions to the Subject.

E. P. Goldschmidt & Co., Ltd., 45 Old Bond Street, London, W. 1, England, Catalogue 62, Old Science and Medicine.

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